

An Innovative Pilot Evaluation of a Pre-adolescent Food Literacy Program-
“Fresh Fuel: The CanU Food Club”

by

Mihiri Witharana

A Thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

In partial fulfillment of the requirements of the degree of

MASTER OF SCIENCE

Department of Human Nutritional Sciences

University of Manitoba

Winnipeg

ABSTRACT

“Fresh Fuel: The CanU Food Club” (*Fresh Fuel*) is the food and nutrition component of the larger *CanU* program aimed at improving the future well being of vulnerable children. A mixed-method case study evaluation was conducted with *Fresh Fuel*, employing a Utilization-Focused Evaluation approach. Results suggested that there were some gains in Fresh Fuel Participant (FFP) food and nutrition outcomes. Also, there were a variety of social benefits to FFPs, such as positive interaction with volunteers and peers, and having fun. Volunteers and practicum students developed career goals and skills. Results identified incompatible program goals, time limitations, inconsistent program implementation, and lack of direction in nutrition education; however, *Fresh Fuel* provided a supportive environment, hands on learning, and included positive nutrition discussions and food preparation experiences. The Utilization-Focused Evaluation approach has resulted in a meaningful report. Rigorous evaluations of *Fresh Fuel* and other food and nutrition programs are recommended.

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to my advisor, Dr. J. Slater, for her unwavering support and encouragement. I am grateful for your mentorship and guidance in completing this thesis project, as well as your support in my growth as a researcher.

I am grateful for the constructive feedback and encouragement of my advisory committee, Mr. Caslor, Dr. Aukema, and Dr. Mignone throughout this process. Thank you for the opportunity to learn from you,

I would like to thank CanU for letting me be a part of this process and all the evaluation participants for sharing their experiences.

I am pleased to acknowledge the generous financial support of the Social Sciences and Humanities Research Council of Canada through the Manitoba Research Alliance grant: Partnering for Change – Community-based solutions for Aboriginal and inner-city poverty.

Without the support of my family I would not be here today. To my husband and best friend, your unwavering confidence in me has always been a source of strength. To my sister and brother thank you for being my support system.

A special thank you to my parents, you have always been there for me.

This is for you.

TABLE OF CONTENTS

ABSTRACT	i
ACKNOWLEDGEMENTS	ii
LIST OF TABLES.....	vi
LIST OF FIGURES.....	ix
LIST OF ABBREVIATIONS.....	x
CHAPTER 1—INTRODUCTION.....	1
Overview of the problem.....	1
Overview of <i>CanU</i> and <i>Fresh Fuel</i>	1
Study purpose	4
Research questions	5
CHAPTER 2—LITERATURE REVIEW	6
Health of Canadian children.....	6
Dietary patterns	6
Obesity.....	7
Food insecurity.....	8
Scoping review of food and nutrition education programs.....	10
Introduction	10
Methods	11
Participant characteristics.....	13
Program characteristics.....	13
Program evaluation	19
Targeted outcomes	20

Conclusions and study rationale	22
CHAPTER 3—METHODOLOGY.....	24
Study design	24
Case-study research approach.....	24
Participatory Action Research approach: Utilization-Focused Evaluation framework	27
Evaluation focus	30
Study participants	31
Participant recruitment and consent.....	36
Ethics.....	36
Compensation.....	37
Data collection.....	37
Data analysis.....	42
Validity	44
CHAPTER 4—RESULTS	46
Research Q1.....	50
Research Q2.....	54
Research Q3.....	56
Research Q4.....	58
Research Q5.....	61
Research Q6.....	65
Research Q7.....	69
<i>Food Lab</i> challenges/suggested improvements	69
Things that worked well/were positive in the <i>Food Lab</i>	79

<i>CanU Café</i> challenges/ suggested improvements.....	88
Things that worked well/ were positive in the <i>CanU Café</i>	88
<i>Fresh Fuel</i> : General comments about the program	92
Researcher reflections.....	95
CHAPTER 5—DISCUSSION.....	97
Program outcomes	98
Fresh Fuel Participant (FFP) outcomes	98
Volunteer/practicum student benefits.....	101
Program recommendations.....	102
Recommendation 1	104
Recommendation 2	107
Recommendation 3	108
Recommendation 4	109
Recommendation 5	111
Utilization-Focused Evaluation benefits.....	112
Knowledge translation	113
Limitations.....	114
CHAPTER 6—CONCLUSION	117
REFERENCES.....	119
APPENDICES.....	139
APPENDIX A	140
APPENDIX B	163
APPENDIX C.....	165

LIST OF TABLES

Table 1. Demographic data on *Fresh Fuel* evaluation participants 34

Table 2. Research Questions and Data Instruments..... 49

Table 3. Fresh Fuel Participant Food and Nutrition Knowledge Gains: Focus Group (FG) Results..... 50

Table 4. Fresh Fuel Participant Self-reported Food and Nutrition Knowledge Gains: Six Evaluation Stations 53

Table 5. Fresh Fuel Participant Self-reported Food and Nutrition Knowledge Gains: 'Lets Learn' Evaluation Station..... 54

Table 6. Fresh Fuel Participant Food and Nutrition Skill Gains: Focus Group (FG) Results..... 54

Table 7. Fresh Fuel Participant Food and Nutrition Skill Gains: 'Recipe time' Evaluation Station 55

Table 8. Fresh Fuel Participant Self-reported Food and Nutrition Skill Gains: 'Lets Learn' Evaluation Station..... 55

Table 9. Changes in Fresh Fuel Participant Attitudes and Behavior Related to Food and Nutrition: Focus Group (FG) and Narrative Questionnaire (NQ) Results..... 57

Table 10. Fresh Fuel Participant Self-reported Changes at Home: 'Bingo' Evaluation Station 58

Table 11. Fresh Fuel Participants Experiencing Fun: Focus Group (FG) and Narrative Questionnaire (NQ) Results..... 59

Table 12. Fresh Fuel Participant Self-reported Program Likes and Dislikes: 'Help CanU Grow' Evaluation Station 61

Table 13. Fresh Fuel Participants Socially Benefiting: Focus Group (FG), Key Informant Interview (ND and CA), and Narrative Questionnaire (NQ) Results 63

Table 14. Volunteer and Practicum Student Self-reported Benefits: Focus Group (FG), Key Informant Interview (NC) and Narrative Questionnaire (NQ) Results..... 67

Table 15. Lack of Challenges and Suggested Improvements: Program Questionnaire (PQ) Results from Three *Food Lab* Sessions 69

Table 16. Time Limitations and Suggested Improvements: Program Questionnaire (PQ) Results from Three <i>Food Lab</i> Sessions	70
Table 17. Time Limitations and Suggested Improvements: Focus Group (FG) and Key Informant interview (NC & ND) Results.....	71
Table 18. Challenges and Suggested Improvements with Program Implementation: Program Questionnaire (PQ) Results from Three <i>Food Lab</i> Sessions	73
Table 19. Challenges and Suggested Improvements with <i>Food Lab</i> Program Implementation: Focus Group (FG) and Key Informant Interview (NC) Results.....	75
Table 20. Challenges and Suggested Improvements with Nutrition Education: Program Questionnaire (PQ) Results from Three <i>Food Lab</i> Sessions	76
Table 21. Challenges and Suggested Improvements with <i>Food Lab</i> Nutrition Education: Focus Group (FG) and Key Informant Interview (NC) Results	77
Table 22. Challenges with and Suggested Improvements to <i>Food Lab</i> Foods: Focus Group (FG) and Key Informant Interview (NC & CC) Results	78
Table 23. Challenges and Suggested Improvements with <i>Food Lab</i> Program Exposure, and Space: Focus Group (FG) and Key Informant Interview (ND & NC) Results	79
Table 24. Positive Characteristics of Nutrition Education: Program Questionnaire (PQ) Results from Three <i>Food Lab</i> Sessions	80
Table 25. Positive Characteristics of Program Implementation: Program Questionnaire (PQ) Results from Three <i>Food Lab</i> Sessions	82
Table 26. Positive Characteristics of <i>Food Lab</i> Nutrition Education and Program Implementation: Focus Group (FG) and Key Informant Interview (NC, ND & CC) Results.....	84
Table 27. Foods were Well Received: Program Questionnaire (PQ) Results from Three <i>Food Lab</i> Sessions	85
Table 28. Summary of Results Identifying <i>Food Lab</i> Challenges, Suggested Improvements and Positive Characteristics	86
Table 29. <i>CanU Café</i> Challenges, Suggested Improvements and Positive Characteristics: Focus Group (FG) and Key Informant Interview (ND, CA & CC) Results.....	90
Table 30. Comments about <i>Fresh Fuel</i> : Focus Group (FG) and Key Informant Interview (ND, NC, CC & CA) Results.....	94

Table 31. Main Program Recommendations 103

LIST OF FIGURES

Figure 1. <i>Fresh Fuel</i> logic model developed at the Summer Institute 2013 by the evaluation team	26
Figure 2. Evaluation participants and data collection tools.	38
Figure 3. Pictures of two Evaluation Stations: ‘Food Groups’ and ‘Bingo’	41
Figure 4. Fresh Fuel Participants' familiarity with foods at three data collection periods.	51
Figure 5. Fresh Fuel Participants' familiarity of food safety techniques at three data collection periods.	51
Figure 6. Fresh Fuel Participants' familiarity of basic food preparation techniques at three data collection periods.	52
Figure 7. Fresh Fuel Participants' enjoyment at three data collection periods.....	59
Figure 8. Fresh Fuel Participants' focusing on tasks at three data collection periods.....	60
Figure 9. Fresh Fuel Participants' interacting with Mentors at three data collection periods.....	64
Figure 10. Fresh Fuel Participants' interacting with peers at three data collection periods.	64

LIST OF ABBREVIATIONS

FFP	Fresh Fuel Participant
ES	Evaluation Stations
PQ	Program Questionnaire
FQ	Food Lab Questionnaire
FG	Focus group
ND	Nutrition Director key informant interview
NC	Nutrition Coordinator key informant interview
CA	Café Assistant key informant interview
CC	CanU Coordinator key informant interview

CHAPTER 1—INTRODUCTION

Overview of the problem

Increased growth and development makes healthy eating essential for children (Tek et al., 2011) but current eating trends are cause for concern. Canadian children are not consuming adequate amounts of fruits and vegetables (Statistics Canada, 2011), consuming high amounts of fast foods (Lilico, Hammond, Manske & Mutnsghan, 2014), and consuming foods higher in fat, sugar, salt (Jenkins & Horner, 2005; Health Canada, 2012), as well as beverages laden with sugar (Danyliw, Vatanparast, Nikpartow & Whiting, 2012). Additionally, unhealthy eating patterns can be magnified by food insecurity (Sean, Lambert, O' Loughlin & Gary-Donald, 2012; Kirkpatrick & Tarasuk, 2007) and poor diet is a risk factor for obesity (Public Health Agency of Canada and Canadian Institute for Health Information, 2011; Health Canada, 2006).

These unhealthy eating patterns indicate that current approaches to ensure children are nutritionally healthy are not succeeding, and there is a need for food and nutrition programs. Specifically, more research on food and nutrition extracurricular programs needs to be conducted (Freedman & Nickell, 2008). Conducting more accurate evaluations focused on the end users can help develop a more effective program.

Overview of *CanU* and *Fresh Fuel*

CanU is a multicomponent, community-based program conducted in partnership with the University of Manitoba that identifies and selects vulnerable children to engage in enriched extra-curricular sport and educational programming. *CanU* aims to build potential in these children to make long term academic and health improvements, and to impart short-term positive benefits, such as social benefits, and improve self-esteem.

Typically the three main components of *CanU* are: *Fresh Fuel*, the *Literacy Club*, and physical activities. However, depending on the child's area of interest and partnerships between different University of Manitoba faculties and *CanU*, children may engage in other activities throughout the program such as music. *CanU* selects children after considering several factors. Selection is mainly based on teacher recommendation and the child's desire to participate demonstrated by a submission of a short writing piece with their application. However, family income plays a significant role in the selection process, since *CanU* targets vulnerable children from low socio-economic backgrounds.

CanU adheres to the Hope Theory to foster positive change in children. The main premise of this theory is that confidence and belief in one's ability is conducive to building hope (Snyder, 2002). In particular, this theory signifies the importance of hope in the creation, maintenance and implementation of goals (Snyder, 2002). This premise guides *CanU* through the development of program goals and activities, which are intended to increase exposure to a university environment, positive Mentors and healthy lifestyles, so that children see that academic and health goals are achievable. *CanU* takes a holistic approach in its overall goal of building potential in children. Specifically, the different activities engage children in a post-secondary setting, and allow for positive experiences where children can succeed at tasks in different environments. Mentorship by university students allows these successes to be reinforced and encouraged. The outcomes of each activity are expected to build on each other and the expectation is that children's perceptions of what they believe is attainable will change and grow. Ultimately, this will build hope and motivation, which will foster the future development of positive goals and changes in behavior.

Having a theoretical basis to guide program development is important because behavior change can be complex. According to Atkins and Michie (2013), for behavioral change to occur individuals must know what steps to take, how important it is to make the change, and have the necessary skills. Also, individuals must have social and environmental support. Health promotion in general has focused on providing information while ignoring motivational, social and the environmental factors. By utilizing Hope Theory *CanU* aims to address some of these gaps.

“Fresh Fuel: The CanU Food Club” (*Fresh Fuel*) is the food and nutrition component of *CanU*. *Fresh Fuel* is composed of the *Food Lab* and the *CanU Café*. Food and nutrition education is taught primarily by engaging Fresh Fuel Participants (FFPs) in food preparation, and food and nutrition discussions in the *Food Lab*. The focus of the *CanU Café* is to foster a positive environment, as well as to provide a healthy meal. *Fresh Fuel* includes FFPs, University of Manitoba students and student volunteers, and staff. Mentorship by University of Manitoba students and student volunteers is an essential component of the larger *CanU* program and also *Fresh Fuel*; therefore, in addition to targeting food, nutrition, and food safety outcomes *Fresh Fuel* targets broader *CanU* outcomes. Particularly, a main *CanU* goal is to foster positive Mentor-mentee relationships and these relationships primarily occurs with Mentors who are university student volunteers and work one-on-one with the children throughout *CanU*. To build these relationships, despite the growth in number of child participants from 18 in the first program year to 120 in the third year, *CanU* maintains a 1:2 ratio of Mentor to child participant. Also, specific to *Fresh Fuel*, there are Nutrition Instructors (University of

Manitoba Human Nutritional Sciences student volunteers) who interact with a small group of FFPs during the *Food Lab*.

Specific aims of *Fresh Fuel* are to:

1. Motivate and instill hope in children to reach their potential by exposure to university settings and student mentorship
2. Increase desire and confidence to lead healthier lifestyles through food literacy education by engaging children in:
 - a. Food preparation knowledge and skill development
 - b. Exposure to new healthy foods
 - c. Food safety education

CanU approached the University of Manitoba Human Nutritional Sciences department in 2013 to assist in conducting an evaluation of *Fresh Fuel*. While, general aspects of *CanU* have been evaluated this is first in-depth evaluation of *Fresh Fuel* conducted in partnership with the university. Using a Utilization-Focused Evaluation framework (Patton, 2011) a case study evaluation was conducted. Most importantly these approaches were used to ensure that the evaluation was contextualized and the needs of *CanU* were addressed (Patton, 2011).

Study purpose

The purpose of this research project was to assist *CanU* in developing the most effective *Fresh Fuel* program possible. There were two components to the evaluation: a short-term summative evaluation and an in-depth formative evaluation. The hope is that this evaluation will enhance *Fresh Fuel* by shedding light on areas of strength and areas

that can be improved, and by providing guidance for future evaluation methods.

Specifically, the objectives were to:

1. Assess the benefits to Fresh Fuel Participants in terms of:
 - a. Nutrition, food and food safety
 - b. Program experiences
2. Assess experiences of volunteers and practicum students
3. Identify challenges to the program and areas for improvement

Research questions

Specific evaluation questions included:

1. Are Fresh Fuel Participants gaining knowledge in food, nutrition and safety?
2. Are Fresh Fuel Participants gaining skills in food, nutrition and safety?
3. Have Fresh Fuel Participants changed their attitudes or behaviors towards food and eating?
4. Are Fresh Fuel Participants having fun?
5. Are Fresh Fuel Participants benefiting socially?
6. How have University of Manitoba volunteer and practicum students benefited?
7. What program elements are most effective, and what changes (educational, operational and administrative) would make the program run more effectively?

CHAPTER 2—LITERATURE REVIEW

Health of Canadian children

Dietary patterns

Increased growth and development makes healthy eating essential for children (Tek et al., 2011) but current eating trends are cause for concern. In 2011, less than half of Canadian children between 12-19 years old reported consuming fruits and vegetables at least 5 times a day (Statistics Canada, 2011). Not only is there a declining trend in consumption of healthy foods but also 18% of Canadian children in grades 5-8 and 27% of adolescents consume fast food at least twice a week (Lilico, Hammond, Manske & Mutnsgan, 2014). Notably, in Manitoba 38% of youth reported that they ate fast food at least once a day (Manitoba Youth Health Survey Report, 2014). Eating foods away from home, whether foods are consumed in fast-food restaurants or full-service restaurants, is linked to increased caloric intake in children and adolescents (Powell & Nguyen, 2013). Also, adolescent diets increasingly contain foods high in fat, sugar and salt (Jenkins & Horner, 2005; Health Canada, 2012). For example, 80% of girls and 97% of boys consumed more than 2300 mg/day of salt, which is the upper tolerable limit (Health Canada, 2012). Consumption of carbohydrates was found to be within adequate amounts; however, the types of carbohydrates consumed were not examined so children could be over consuming refined carbohydrates (Health Canada, 2012). Canadian children are also over consuming sugar-sweetened beverages (Danyliw, Vatanparast, Nikpartow & Whiting, 2012). These unhealthy eating patterns indicate that current approaches are not succeeding and there is a need for food and nutrition programs.

Obesity

Canadian children are becoming more overweight. According to St-Onge, Keller and Heymsfield (2003) the “balance between energy expenditure and energy intake is key to the maintenance of body weight” (p. 1068). The rates of obesity in Canadian children have tripled over the last 25 years (Health Canada, 2006; Tremblay et al., 2010). Almost one third (31.5%) of Canadian children between 5 and 17 years old were overweight or obese between 2009 and 2011 (Roberts, Shields, de Groh, Aziz & Gilbert, 2012) and in 2004 one third of Manitoban children in were overweight or obese (Yu, 2010). Rates of obesity can disproportionately affect certain children. Specifically, Veugelers and Fitzgerald (2005) found high childhood obesity prevalence in disadvantaged socioeconomic households. This prevalence decreased with improved socioeconomic status. Furthermore, they found that obesity rates in poor neighborhoods were up to twice those in rich neighborhoods.

Outcomes of obesity include health complications and increased healthcare costs. Not only do obese children grow up with an increased risk of becoming obese adults but also they are at risk for other chronic diseases and are more likely to have shorter lifespans, all of which could increase health care costs (Kumanyika, Jeffery, Morabia, Ritenbaugh, & Antipatis, 2002; Public Health Agency of Canada, 2013). Specifically, obesity is a risk factor for coronary heart disease, hypertension, type 2 diabetes, stroke, osteoarthritis, gallbladder disease, and some cancers (Health Canada, 2006). Of these chronic diseases, obesity is one of the main risk factors for heart disease, stroke and type 2 diabetes, and combined they affected 1.8 million Canadians in 2006 (Health Canada, 2006). Health complications from obesity can burden the health system with increased

lengths of stay at hospitals as well as increased costs. The estimated cost of obesity in Canada in 2008 was \$4.6 billion dollars, which was \$735 million dollars more than the cost in 2000 (Public Health Agency of Canada, 2011).

Poor diet is one of two risk factors for obesity (Public Health Agency of Canada, 2011; Health Canada, 2006). Specifically, Hills and Peters (1998) described an environment that promotes obesity as one with easy access to cheap, high-energy foods along with a lifestyle that does not promote physical activity. In this ‘obesogenic environment’ there is also increased portion size and food availability (Hills & Peters, 1998), which can contribute to the high rates of obesity seen today. For instance, there is a positive connection between eating fast foods, and increased body fat (Lei, O’Loughlin, Tremblay & Gary-Donald, 2014). Specifically, there is an association between overweight and consumption of sugar-sweetened beverages in children (Lei, et al., 2014). Lastly, food consumption when children are not hungry has also been linked to increased body weights (Lansigan, Emond & Gilbert-Diamond, 2015).

Food insecurity

Food insecurity is a complex issue and affects Canadians. Food security, according to Food and Agriculture Organization (1996), “exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (as cited from Health Canada, 2004, p.2). In particular, access to food is the main aspect that affects both individual/household and community food security (Dietitians of Canada, 2005). At least once in 2011, 12.3% or 1.6 million Canadian households were classified as food insecure and 17% of children lived in households that experienced food insecurity

(Tarasuk, Mitchell, Dachner, 2013). Specifically in Manitoba, 18.9% of children live in households that were food insecure in 2011, which was much higher than the national average (Tarasuk et al., 2013). Many determinants for food security exist and eating patterns are complicated and influenced by various factors that impact the individual and/or the larger environment (Jenkins & Horner, 2005).

Income, ethnicity and immigrant status are associated with food insecurity. Notably, Power (2005) stated that the most important determinant of food insecurity is income. Rainville and Brink (2001) reported that food insecurity for the lowest income levels were almost 10 times that of the highest income levels. Also, according to Health Canada (2004), food insecurity was more prevalent in households with lower income. Specifically, severe food insecurity and moderate food insecurity were equally found in the lowest income levels, but in higher income levels severe food insecurity was less prevalent than moderate food insecurity (Health Canada, 2004). Aboriginal households are also three times more food insecure than the average Canadian household (Elliot, Jayatilaka, Brown Varley & Corbett, 2012; Health Canada, n.d) and recent immigrants to Canada are also more food insecure than non-immigrants (Health Canada, n.d.).

Poor eating habits can be magnified in food insecure children. Food insecurity in low-income households is found to have a negative impact on the quality of children's diets (Sean et al., 2012). For example, milk consumption was lower and sugar sweetened beverage consumption was higher in low-income children (Sean et al., 2012).

Additionally, food insecure children have been found to have lower fruit and vegetable consumption compared to food secure children (Kirkpatrick & Tarasuk, 2007). A subset of those food insecure children were also found have higher energy consumption. This

could result in future weight complications if conditions persist over an extended period of time (Kirkpatrick & Tarasuk, 2007). A link between food insecurity, obesity and gender may exist, and this link may be specific for vulnerable ethnicities (Dinour, Bergen & Yeh, 2007). For example, in Manitoba approximately 40% of children who were food insecure were also overweight or obese (Yu, 2010).

Scoping review of food and nutrition education programs

Introduction

As a component of public health, prevention of disease is a complex issue and examination of populations and risk factors show this complexity (National Advisory Committee on SARS and Public Health, 2003). Public health is distinguished from clinical medicine by its preventive population-focused view rather than individual-focused and clinical treatment view (National Advisory Committee on SARS and Public Health, 2003). Individual traits, and social, economic, natural, built and political environments affect populations and individuals; therefore, disease prevention is complex (National Advisory Committee on SARS and Public Health, 2003). Also, programs focusing on prevention, such as food and nutrition after school programs, are more cost effective than treating a condition (Province of British Columbia, 2005).

Programs that motivate, and enhance development and health can be important to the normal development of children (Fredricks & Simpkins, 2005; Gilman, Meyes, & Perez, 2004). Extracurricular programs, defined as structured and supervised activities outside of school time, can be particularly beneficial to vulnerable children (Fredricks & Simpkins, 2005). This is primarily because children in lower socioeconomic status households appear to have lower extracurricular activity participation (Simpkins,

Delgado, Price, Quach & Starbuck, 2013; Fredricks & Simpkins, 2005). Fredricks and Simpkins (2005) concluded that participation in these activities could have enhanced benefits for these children compared to other children. There are several factors that explain why vulnerable children benefit from these programs. Specifically, lower socioeconomic status children had access to schools with fewer resources. Additionally, lower income levels could limit access to healthy foods and result in choosing housing in areas with unhealthy food environments (Kant & Graubard, 2013).

Before conducting the *Fresh Fuel* research evaluation an important first step was to gain an in depth understanding of programs similar to *Fresh Fuel* and examine how these programs were evaluated. A scoping review can be utilized to examine existing literature and identify research gaps (Arksey & O'Malley, 2005). Specifically, existing food and nutrition programs that had some success in program outcomes were examined in this scoping review.

Methods

This review of literature was conducted through the PubMed and Scopus databases using terms that included: 1) evaluated, 2) nutrition, 3) intervention, 4) in schools and/or communities, 5) for children. After the initial search was made, the results were refined to include only certain criteria. The two databases had different refining criteria, but in general, articles were narrowed in language, date, source and location. First, programs implemented in Canada and The United States were selected. They are both western, developed countries with similar obesity trends and cultures. As a result, it was believed that there would be more similarity in the programs compared to programs from different continents and countries, which may have been influenced by different

geographical, societal and other unknown factors. Next, only articles written in English were selected, since location was refined to English speaking countries the assumption was that articles would be written in English. Searches were refined to select clinical trials or experimental articles published no earlier than 2000 to ensure an inclusive search of only primary academic sources rather than literature reviews.

There were additional exclusion criteria. Programs specifically targeting unhealthy participants or those dealing with a chronic disease, for example obese or overweight children were excluded. However, programs that targeted middle school children or had an average age of no less than 9 years were included. Interventions that did not involve nutrition education by an instructor/teacher were also excluded; therefore, if the nutrition component of a program only involved environmental changes, web-based interaction and/or video games the program was excluded. One important restriction made on this review was to examine programs that had a program outcome on the participants (i.e. programs were evaluated and had a program effect on the participants). Specifically, to examine changes in participants only programs with a pretest and posttest evaluation design were selected (Wood & Brink, 1998). Also, the term “effective” was used very loosely to be as inclusive as possible; therefore interventions with even a small program impact were included. Fifty-two programs met the selection criteria and were analyzed to identify how common certain participant and program characteristics were, as well as program impact and evaluation. In some instances the number of programs (n) is identified to illustrate how common a participant, program or evaluation characteristic was.

Participant characteristics

Differences existed in ethnicity, income, gender and/or age of participants. The majority of programs targeted children from low-income families (n=17). African American participants were targeted mostly, followed by Hispanic/ Latino/ Mexican, and only one program targeted American Indian. Almost half of the interventions that targeted a specific ethnicity also targeted children from low-income households. Participant age ranges were broad but on average grades 4-6 were targeted. According to Stice, Shaw and Marti (2006) targeting preadolescents may be more effective than targeting younger children because preadolescence is a stage where children develop self-regulatory skills and gain independence. As a result, these children have the ability to understand concepts and have greater control over their food choices. They suggested that positive program effects with younger participants could be a result of greater parental involvement and not necessarily a result of changes participants make. Also, as seen above certain characteristics can place children at risk for food insecurity and/or obesity such as income, ethnicity and immigrant status; therefore it is important for more programs to target these participant characteristics.

Program characteristics

Program purpose and strategies. The goal of preventing chronic diseases and using only nutrition strategies were common. Specifically, many programs (n=26) sought to prevent chronic diseases and other diseases. Of those interventions targeting chronic diseases, obesity/overweight, cardiovascular disease, diabetes mellitus, and cancer were targeted in order of most to least common. Other interventions specifically aimed to

improve the nutritional health of participants (n=16) or targeted general health improvement (n=10).

To achieve objectives many interventions only implemented nutrition strategies (n= 23), while others included strategies besides nutrition such as physical activity. Specific examination of nutrition strategies revealed that some programs provided nutrition education only through a classroom-like setting (n =12) but the rest included multiple nutrition strategies, such as: hands on activities/cooking classes with food tasting, family involvement, school environmental change, peer leaders, gardens and marketing. As an example, the intervention examined by Day, Strange, McKay and Naylor (2008) targeted changes in fruit and vegetable knowledge, attitudes, perception and willingness to try foods. They implemented classroom nutrition education, whole school strategies and a family component. Furthermore, the classroom education was enhanced with fruit and vegetable taste testing. All activities were designed to increase food and nutrition intake. In contrast, an examination of the other programs revealed that sometimes a healthy lifestyle approach was taken with both nutrition and non-nutrition strategies (e.g. physical activity); however, some of these programs only targeted nutrition outcomes. For example, Tuuri et al. (2009) included physical education despite targeting only nutrition status and Wang et al. (2010) evaluated the nutrition component of a larger health improvement program. Programs that target outcomes using different strategies might be more successful at reinforcing messages but greater clarity could assist in understanding why certain strategies were included.

Interventions utilized one of three settings: school, community or a combination thereof. A program was classified as having a combined approach if there were school-

based and after school activities, the program classified a specific activity or strategy as community-based in addition to having instruction during school time, or a school-community partnership was made. Some interventions employed community approaches (n=10), very few utilized a combination of those (n=4); while the rest were school-based; therefore, almost 75% of the programs were implemented in a school, so it would not be reasonable to compare school to community and/or school-community approaches.

According to Khambalia, Dickinson, Hardy, Gill and Baur (2011), schools are common targets for health promotion programs because children spend a significant amount of time at school and schools can influence a large number of children. Most of the combined school-community approaches were more effective (i.e. resulted in some behavior change). Since various factors influence children's behavior and perceptions such as environment and family, (Golan & Crow, 2004) a potential explanation for why these programs may be more successful is that they target two important environments of children (i.e. both school and community). Additionally, most of the combined school-community approaches used multiple nutrition strategies (Hoelscher et al., 2010; Day et al., 2008 and Trevino et al., 2004), which could have further enhanced their effectiveness.

Theoretical basis. Theory based interventions (n=25) were more common than participatory design (n=3); however, the majority of interventions did not mention the theoretical basis or design (n=24). Interventions that targeted behavior change using theories were more effective (75%) than those without and this is also supported by literature (Michie & Johnston, 2012). Notably, one intervention despite using a combination of Social Cognitive Theory and Theory of Planned Behavior was not very effective (Prelip, Slusser, Thai, Kinsler & Erausquin, 2011). Teachers were allowed a

great deal of flexibility in developing programming, which could have counteracted the benefits of the theories. Wilson et al. (2002) compared the effectiveness of two conditions, one with Motivational Interviewing and Social Cognitive Theory, and one with only Social Cognitive Theory. Their results indicated that both conditions were equally effective. Social Cognitive Theory was more commonly used but in total 10 different theories were used by the programs in this scoping review. The use of many different theories indicates that food and nutrition programs are very diverse.

Where used the Participatory Action Research approach facilitated program development. Participatory research does not describe any one method of research rather it is an approach that includes community members in the research process (Cornwall & Jewkes, 1995). With this approach community members have the opportunity to find solutions to problems they face, which increases the accuracy of research, allows for social change and generates knowledge in the community (Cornwall & Jewkes, 1995; George, Daniel & Green, 2007). McGaffey, Hughes, Fidler, D'Amico and Stalter (2010) stated that the use of a Participatory Action Research in program development helped produce a targeted and improved program. Wilson, Jones, McClish, Westerberg and Danish (2012) worked together with school principals in the development and implementation of their program. Participatory Action Research approaches have been beneficial in bringing research and practice together in public health (Cargo & Mercer, 2008). Use of Participatory Action Research approaches could also extend to developing contextualized evaluations of food and nutrition programs. Additionally, the use of both a participatory approach and a theoretical-basis may enhance programming more than each alone.

Length. Program lengths ranged from 1 hour (McGaffey et al., 2010) to 3 years (Baranowski et al., 2000; Caballero et al., 2003; Hoelscher et al., 2010; Wang et al., 2010). The majority of interventions (n=20) lasted between 3 to 8 months in length. Programs with lengths greater than 8 months (n=9) were also common. Almost all of the subset of programs that resulted in some behavior change were longer than 1 month. Bautista-Castano, Doreste, and Serra-Majem's (2004) review of obesity-prevention programs found that interventions with durations that were longer were the most effective. Literature also supports the association between stronger intervention effects and longer program lengths in other prevention programs targeting other health behaviors (Rooney, & Murray, 1996; Stice & Shaw, 2004). According to Stice and Shaw (2004) longer program lengths allow participants to internalize material, attempt to make changes, and if assistance and support is needed they can obtain that in the next program session. Furthermore, Birnbaum, Lytle, Story, Perry and Murray (2002) hypothesized that the reason why peer leaders obtained greater positive outcomes compared to other students could be because they had greater exposure to the intervention. For example, one intervention that evaluated changes in peer leaders provided one week of training (Bogart et al., 2011), while in another intervention peer leaders received training every week (Stock et al., 2007). Ultimately, longer program lengths may be more effective.

Sample size. Two thousand ninety-four participants were included in the largest intervention (Hollar et al., 2010), while only 14 participants were included in the smallest sample size (Baker, Gilley, James, & Kimani, 2012). Approximately half of the interventions (n=25) had a sample size greater than 300 and a majority of those interventions (n=16) had a sample size greater than 1000 participants. Larger sample

sizes can add power and generalizability to program evaluation findings. As an example, the intervention studied by DeVault et al. (2009) produced significant program effects at follow up but the program only analyzed data from 18 participants; therefore, this a larger sample of participants may be needed.

Instructors. Since the majority of interventions were school-based, teachers were most likely to be program instructors (n=34). In the community-based interventions teacher-like instructors implemented the program therefore the term teacher is used for those instructors as well. Most of these teachers were trained predominately by the researchers implementing the intervention (n=23). Aside from teachers, experts such as dietitians, doctors and nutrition university students were also common intervention instructors (n=11). Lastly, five interventions used older children as peer leaders to implement the program and these peer leaders were extensively trained. Teachers have a relationship with their students, and are more knowledgeable and experienced with teaching (i.e. can use optimal teaching strategies) than other professionals. In contrast, an expert knows more about the subject matter but might not know how to convey their message to children. That is probably why teachers trained by experts were the most common instructors in the more effective programs (i.e. programs that resulted in some behavior change). They are knowledgeable about the topic and also have the ability to connect with the students and teach the material appropriately. Lastly, using peer leaders as instructor's sounds promising, since Abood, Black and Coster (2008) noticed that peer influence motivates behavior.

Program evaluation

Evaluation design. All interventions used a pretest and posttest design but a few interventions (n=9) collected data after post-testing (i.e. delayed follow-up). The delayed follow-up times ranged from three weeks (DeVault et al., 2009) to two years (Forneris et al., 2010) after program completion. Additionally, Forneris et al. (2010) collected delayed follow-up data more than once. As a result, they had four points of data collection, at pretest and posttest, and one year and two year delayed follow up. Lastly, not all interventions included control groups (Garcia-Lasurain, Kicklighter, Jonnalagadda, Boudolf & Duchon, 2006; Wang et al., 2010; Seal & Seal, 2011; Baker et al., 2012, Contento, Koch, Lee, Sauderli & Calabrese-Barton, 2010).

Evaluation methods. Approximately half of the programs (n=26) administered only questionnaires to program participants. Most of the other programs used a combination of evaluation techniques, such as collecting anthropometrics and/or biochemical data, direct observations, and telephone interviewing. Questionnaire sources came from outside the program or were created specifically for that program. However, questions from food frequency questionnaires were commonly used. After questionnaires, collection of anthropometric data, 24 hour recalls, observations and parental questionnaires were the next common evaluation tools from most to least common. Lastly, only four programs used theoretically based questions in the questionnaires (Spiegel, & Foulk, 2006; Wilson et al., 2002; Prelip et al., 2011; Birnbaum et al., 2002). Several studies noted that the use of self-reported data was an evaluation limitation because biases can skew findings (DeVault et al., 2009; McCormick, Kattelman, Ren, Richards & Well, 2009; Birnbaum et al., 2002; Contento et al., 2010;

Day et al., 2008). Specifically, Contento et al. (2010) and Day et al. (2008) stated that using self-reported measures might lead to social desirability biases. Therefore, multiple methods of collecting data could be used to enhance evaluation results and counteract biases.

Targeted outcomes

Behavior change. All interventions that were examined produced some change in participant knowledge, attitudes, preference, behavior, anthropometrics, or self-efficacy. Since the goal of health programs is often to alter behavior, behavior changes were of specific interest and suggest a more effective program. Targeted behaviors ranged from food-specific actions such as decreasing intake of sugar-sweetened beverages (Bogart et al., 2011; Harrell, Davy, Stewart & King, 2005) to more general behaviors such as increasing fruit and vegetable consumption (n=15), and increasing fiber intake (Gatto, Ventura, Cook, Gyllenhammer & Davis, 2012; Trevino et al., 2004). Other behaviors included improving breakfast eating patterns (Birnbaum et al., 2002), decreasing fat consumption (Black et al., 2010; Frenn, Malin & Bansal, 2003; Reynolds et al., 2000) and increasing food-asking behavior (Baranowshi et al., 2002).

Seventy percent (n=36) of the 52 programs produced a behavior change. This may indicate that most food and nutrition programs were successful but deeper examination suggested that was not always the case. Twenty-three interventions that produced a “behavioral change” had outcomes that were mixed or significant but small. For example, Caballero et al. (2003) used 24 hour recalls, which confirmed a significant reduction in daily energy consumption and in intake of fat from daily energy but observations only confirmed the reduction in fat, not changes in total energy. Similarly, previous academic

reviews have indicated that food and nutrition program effects are inconsistent or small (Safron, Aleksandra, Gaspar, & Luszczynska, 2011; Thomas, 2006). Also, of those programs examined in this review that conducted follow-up testing and produced a behavior change (n=9), four interventions showed a decline or reversal at follow-up (Black et al., 2010; Wilson et al., 2012; Freedman, & Nickell, 2010; Reynolds et al., 2000). Prelip et al. (2012) concluded that impacting behavior is difficult and it is influenced by multiple factors. While behavior change is the optimal outcome for health related programs, changing children's dietary behavior may be more difficult than changing dietary behavior in adults. Children have limited control on the foods that they are given (Forneris et al., 2010) and a child's environment and family can play a significant role in influencing behavior (Golan & Crow, 2004). Additionally, there are complex interactions between socioeconomic factors, ethnicity, the larger environment a child lives in and eating patterns (Sean et al., 2012; Dinour, Bergen & Yeh, 2007), which are often beyond the scope of one program. Therefore, targeted behavior outcomes in program should be realistic, and behavior changes should be monitored for stability over time.

Knowledge, attitude and self-efficacy. Almost all of programs targeted food and nutrition outcomes besides behavior change. Targeted knowledge changes mainly focused on fruit and vegetables, but other types of knowledge were also focused on. For example, program participants were examined on their ability to indicate relative food fat content (DeVault et al., 2009) and to correctly read nutrition labels (Abood et al., 2008). Also, measurement of food and nutrition attitudes and preferences were common. For example, Wall, Least, Gromis and Lohse (2012) used the measurement of food and

nutrition preferences as an indicator of behavioral change, and examined various theories to understand why individuals act the way they do. Also, Beaulieu and Godin (2012) examined the motivation to change behavior. Specifically, they examined the motivation that would lead to participants staying in school for lunch. Similarly, in addition to measuring self-efficacy Contento et al. (2010) examined personal agency, both of which are related to motivation. While the goal of many programs may be to change the behavior of participants, these other outcomes are also important. These outcomes can be important indicators of behavior change and/or necessary for behavior change to occur.

Conclusions and study rationale

As stated previously, unhealthy eating patterns in children can have significant health consequences (Public Health Agency of Canada and Canadian Institute for Health Information, 2011; Health Canada, 2006); therefore, more research needs to be conducted on how to improve food and nutrition programs. A review of the literature found that there is diversity in food and nutrition program characteristics, which suggests that there is still a lack of understanding of what a successful food and nutrition program for children looks like. However, it is possible to infer that more effective programs are more likely to have: multicomponent strategies, a theoretical basis for program design, longer program lengths, and trained teachers as instructors. This review examined programs that produced a change in participants; however, few were community-based programs, which indicate that there is a need to better understand and improve these programs (Freedman & Nickell, 2008). Also, programs need to be improved so that food and nutrition outcomes are realistic and attainable. This is especially important as the literature suggests that lasting behavior change is difficult to obtain (Prelip et al., 2012; Forneris et

al., 2010). Additionally, a Participatory Action Research approach in both food and nutrition program development and evaluation was not evident in this review despite the many benefits this approach may provide.

This research study will address the gaps in the literature by conducting an evaluation of *Fresh Fuel* using a Participatory Action Research approach. Evaluations need to “describe and assess what was intended...what happened that was unintended, what was actually implemented, and what outcomes and results were achieved” (Patton, 2011, p. 3). In community-based programs there can be a broad understanding of what program success means, and activities and goals can change to reflect shifts in conditions and members, which makes conducting evaluations especially difficult (Estable, 2006). Also, engaging community members in program evaluations may lead to a stronger evaluation, especially since community-based programs, like *CanU*, with multiple partnerships are often complex (Estable, 2006); therefore, a Participatory Action Research approach is ideal for this evaluation.

CHAPTER 3—METHODOLOGY

Study design

This research evaluation project employed a mixed method, non-experimental design. “Mixed methods research...permit[s] researchers to address more complicated research questions and collect a richer and stronger array of evidence than can be accomplished by any single method alone” (Yin, 2014, p. 66). Specifically, data was collected using concurrent mixed methods (Creswell & Clark, 2011), which involved the administration of quantitative and qualitative methods at the same time rather than sequentially where methods are administered one after the other. While qualitative and quantitative components allowed us to triangulate and seek complementarity in findings, there was a qualitative priority. Questionnaires with closed ended questions were the primary source of quantitative data, while focus groups and key informant interviews were the primary source of qualitative data. Due to the time and resource constraints placed on this evaluation we did not include a controlled group, so all eligible children were asked to participate in the evaluation.

Case-study research approach

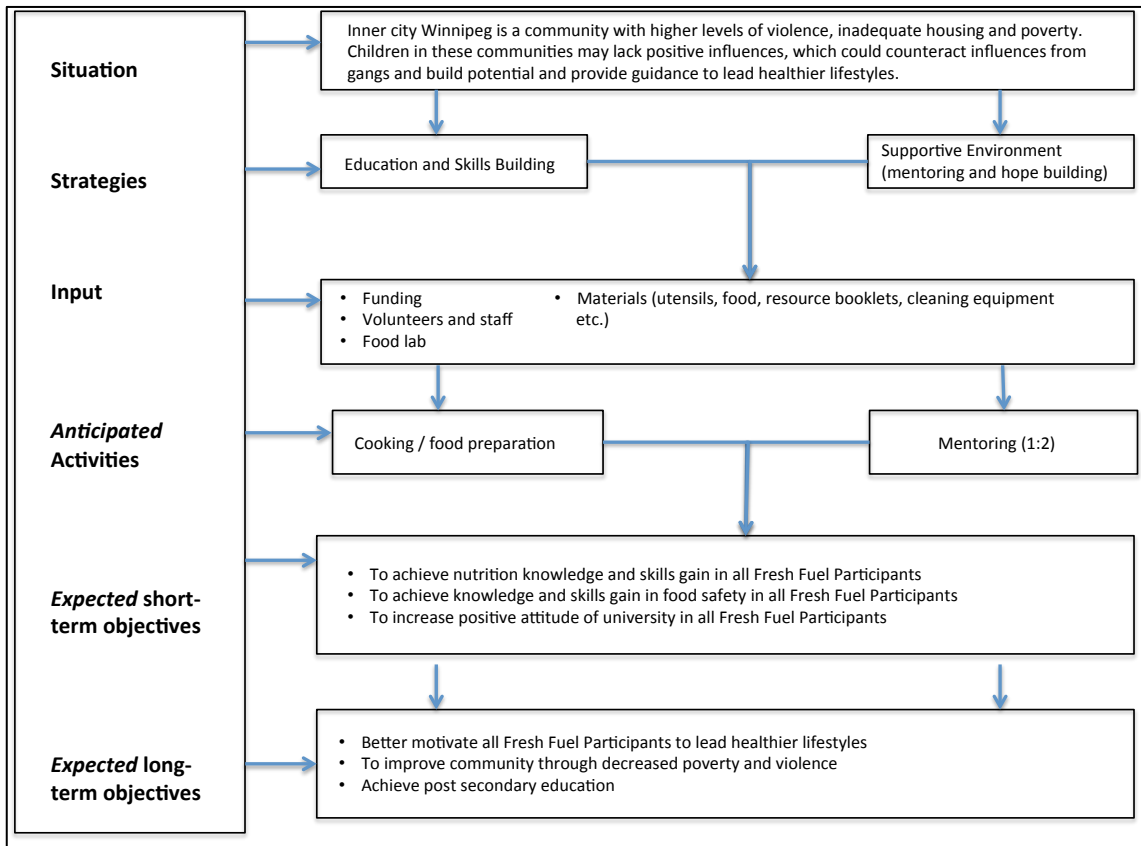
Fresh Fuel as a single case study was selected for this research evaluation. “Case study research allows investigators to focus on a ‘case’ and retain a holistic and real-world perspective—such as in studying...organizational and managerial processes” (Yin (2014, p.4). The researchers had limited control over *Fresh Fuel* program processes, which is a common characteristic in case study research (Yin, 2014). Primarily, the researchers were not involved in developing or implementing *Fresh Fuel*; instead, we were external evaluators of an existing community-based program. Also, *Fresh Fuel* was

still in its early stages of development, so program processes were still not concrete. For example, roles and responsibilities often shifted to accommodate program needs.

Therefore, *Fresh Fuel* was examined “without attempting to control or manipulate the setting, situation, people, or data. Naturalistic inquiry evaluations look at programs within and in relation to their naturally occurring context” (Patton, 2011, p. 296). *Fresh Fuel* is a unique program, which is also another reason why a single case is used (Yin, 2014).

Fresh Fuel had unique objectives, which included capacity building using the Hope Theory (Snyder, 2002); therefore, in this evaluation we also measured program fun and social benefits in addition to the traditional food and nutrition measurements of knowledge, skills, attitudes and behaviors. Case study research often wants to answer questions about “how” things happen and an important aspect of this research evaluation was to determine how the program functioned (i.e. the formative evaluation component) (Yin, 2014). To understand this case better a logic model for *Fresh Fuel* was developed collaboratively with *CanU* (Figure 1). It was used as an analytical tool to help plan the 2013-2014 programming and to design appropriate assessment tools (Yin, 2014).

Figure 1. *Fresh Fuel* logic model developed at the Summer Institute 2013 by the evaluation team



Participatory Action Research approach: Utilization-Focused Evaluation framework

Participatory Action Research is one approach that can be utilized in conducting evaluations. In particular, in this research evaluation the Utilization-Focused Evaluation framework was used (Patton, 2011). The main premise of this framework is that an evaluation should be contextualized and should be judged by its use (Patton, 2011). This means “evaluators and primary intended users must work together to identify the evaluation that best fits...[and adapt] the design to financial, political, timing, and methodological constraints and opportunities” (Patton, 2011, p. 88). One important message in this complex process is that the intended users (i.e. the stakeholders) need to be active in the evaluation because the needs of the intended users should guide the development of the evaluation questions (Patton, 2011). Therefore, a Utilization-Focused Evaluation places importance on evaluators and intended users working together, which was particularly important because the researchers in this evaluation were external evaluators. As external evaluators we only worked with *CanU* for the duration of the evaluation, had limited program knowledge upon starting the research project and were not in tune with the relationship dynamics within *CanU* (Patton, 2011). Also, “when external evaluators complete their contract, they may take with them a great deal of knowledge and insight that is lost to the program” (p. 96), so by working with intended users the knowledge gained by the evaluation could be retained (Patton, 2011). To ensure collaboration throughout the evaluation process an evaluation team was developed, which was comprised of the CanU Nutrition Director and the researchers.

The *Summer Institute in Program Evaluation* at the University of Manitoba in June 2013 was a critical part in this collaborative evaluation process. The CanU Nutrition

Director (key informant) and the researchers, principle researcher (Master's student M. Witharana) and Master's student Faculty Advisor (Dr. J. Slater) all attended the Summer Institute and "work shopped" *Fresh Fuel* as a case study. The Summer Institute was an opportunity for the evaluation team to learn how to develop, implement and disseminate a Utilization-Focused Evaluation for *Fresh Fuel*. The Summer Institute helped build rapport between researchers and the Nutrition Director, and allowed researchers to assess the readiness of *CanU* for conducting an evaluation (Patton, 2011). It allowed for the revision of technical skills, such as learning how to design evaluations and what methods to use as well as increasing *CanU* cultural competence (Patton, 2011) because this was an opportunity for researchers to learn more about *CanU*. Ultimately, this initial step in the evaluation process assisted in reducing potential resistance to the evaluation and increasing buy-in by the stakeholders (Patton, 2011).

The *CanU* Director and Board were open to conducting this evaluation because they initially approached the Faculty Advisor about conducting a program evaluation, and subsequently enrolled the Nutrition Director in the Summer Institute. Also, two *CanU* board members agreed to be on the principle researcher's Master's student advisory committee.

The Summer Institute led to the initiation of a situational analysis, an ongoing process in a Utilization-Focused Evaluation, which involves assessing the program stakeholder readiness, and evaluator readiness and competence (Patton, 2011). From the situational analysis the purpose of the evaluation began to form, which was mainly to improve programming. The preliminary evaluation framework was another important outcome of the Summer Institute. Besides the evaluation team, other university students

and community members participated in developing this preliminary evaluation framework. This additional input was an asset because other potential *CanU* key informants (i.e. nutrition practicum students) were not yet involved in the program.

After the Summer Institute, the evaluation team continued to work closely and a meeting was set-up to a) meet other key *CanU* stakeholders, b) review and approve the evaluation framework and c) develop a steering committee. This meeting included the Nutrition Director, CanU Coordinator and Assistant Coordinator, CanU Director, the principle researcher's Masters program advisory committee, which included two *CanU* board members, and the Faculty Advisor. These various stakeholders were included because "different stakeholder representatives come to an evaluation with varying perspectives about what is important" (p. 44), which help identify important evaluation questions (Patton, 2011). For example, understanding that it was important to design an evaluation that upholds the aim of motivating participants (i.e. in line with the Hope Theory) (Snyder, 2002) was one result of this meeting. It was important for *CanU* that the evaluation motivates the Fresh Fuel Participants (FFPs) because the pre program data collection took place before the commencement of *Fresh Fuel* programming. The preliminary evaluation framework was submitted to these stakeholders prior to the meeting, and questions, comments and revisions were discussed.

A steering committee was assembled during this initial meeting to ensure that open dialogue was maintained between the larger group of key stakeholders and the evaluation team. While the practicum students were not originally part of the steering committee, since they were not involved in *CanU* when the evaluation was being developed, they were a valuable resource in the short time they were involved prior to the

implementation of the evaluation. Their input helped refine the evaluation and assisted the researchers in administering the evaluation. The development of both the steering committee and the evaluation team allowed for the incorporation of the “personal factor” in this evaluation, which Patton (2011) describes as “the presence of an identifiable individual or group of people who personally care about the evaluation and the findings it generates” (p. 62). According to the Utilization-Focused Evaluation framework, identifying and working with these groups/individuals increases the chances that the evaluation findings will be used (Patton, 2011). Regular updates were provided to the steering committee to maintain open dialogue throughout the evaluation process. The steering committee and researchers also worked together to revise the *CanU* evaluation report, so that input from the different key stakeholders would allow for a richer analysis of findings. However, a high turnover of staff and practicum students meant that the many of the *Fresh Fuel* key informants, who were involved in the beginning of the evaluation process, were not involved in this final stage, limiting the Utilization-Focused Evaluation process.

Evaluation focus

A formative evaluation was the primary focus of the *Fresh Fuel* evaluation. Rather than judging effectiveness of a program, which is done in a summative evaluation, the goal of a formative evaluation is to improve a program by investigating strengths and weaknesses (Patton, 2011). However, to a lesser degree a summative component was included because it was important for program stakeholders to identify general trends in outcomes. Additionally, a summative component was included to test appropriateness of innovative evaluation methods. One reason why the focus wasn’t primarily on a

summative component was because literature suggested that food and nutrition program outcomes are difficult to achieve (Prelip et al., 2012; Forneris et al., 2010). Also, in this pilot phase, with the program still developing and growing, the evaluation team decided that *Fresh Fuel* would benefit most from exploring program weaknesses and strengths rather than conducting an in-depth summative evaluation to make crucial “decisions about whether to continue a program, expand it, or change it in some major way” (Patton, 2011, p.116). For example, as the program was still growing, roles and responsibilities of staff, practicum students and volunteers were changing. The Nutrition Director role was new to *Fresh Fuel* and was not present in the previous year or the following year when data was being analyzed. Ultimately, it was believed that this approach would lead to a strong program and the ability to conduct stronger summative evaluations in the future.

Evaluation participants

There were three groups of participants in this evaluation. (See Table 1 for demographic data).

- Fresh Fuel Participants who were *CanU* participants that participated in *Fresh Fuel*.
- *Fresh Fuel* volunteers and practicum students who were all University of Manitoba students.
- *CanU* and *Fresh Fuel* staff members who played a role in implementing *Fresh Fuel*.

Fresh Fuel Participants (FFPs). These were children in grades 4 to 6 from 11 Winnipeg schools, predominantly inner city schools, participating in *Fresh Fuel* (n=92). Over one third (35.9%) of FFPs were Newcomers and 18.5% were from a visible

minority, while 28.3% identified as Aboriginal. *CanU* placed FFPs in groups, and these groups rotated through *Fresh Fuel* (i.e. had 8 or 9 sessions) in addition to other components of *CanU*. To ensure consistent exposure to *Fresh Fuel* FFPs not involved in eight or nine sessions were excluded. FFPs who joined the program after the administration of the pre-program Evaluation Stations were also excluded.

Mentors. Mentors were University of Manitoba student volunteers (n=33) from various University programs and faculties. Approximately two to three Mentors were assigned to a group of ten FFPs and were responsible for the same group from the beginning to the end of the program, for all *CanU* activities including *Fresh Fuel*.

Nutrition Instructors. Nutrition Instructors were also University of Manitoba student volunteers (n=16) who were selected from the Human Nutritional Sciences undergraduate program. They interacted with FFPs only during *Fresh Fuel* and were responsible for implementing *Food Lab* nutrition education, *Food Lab* and *CanU Café* cleanup, and assisting in the preparation and distribution of the *CanU Café* meals.

Nutrition Coordinators. Nutrition Coordinators (n=2) were Human Nutritional Sciences practicum students with previous *Fresh Fuel* experience. They were responsible for the development of and administration of the activities in the *Food Lab*.

Nutrition Director. The Nutrition Director (n=1) was a *Fresh Fuel* staff member who was responsible for *Fresh Fuel*, overseeing both the *CanU Café* and the *Food Lab*, and was a graduate of the Human Nutrition Sciences undergraduate program.

Café Assistants. The Café Assistants were *Fresh Fuel* staff members responsible for the *CanU Café* (n=2). Both were undergraduate students in the Human Nutritional

Sciences department. They worked relatively independently of each other and were each responsible for one of two *CanU Cafe* days every week.

CanU Coordinator. The CanU Coordinator (n=1) was a *CanU* staff member who was not directly involved with *Fresh Fuel* but played a supportive role assisting the Nutrition Director.

Table 1

Demographic data on *Fresh Fuel* evaluation participants

Variables	Results
Fresh Fuel Participants who consented to participate in the evaluation (N=92)	
Age	Years
Mean (years) \pm SD	10.38 \pm 0.78
Range	9– 12
Grade	Years
Mean \pm SD	5.5 \pm 0.52
Mode	6 (46)
Range	4– 6
Gender	% (n)
Female	47.8 (44)
Male	52.2 (48)
Characteristics	% (n)
Newcomer	35.9 (33)
Aboriginal	28.3 (26)
Visible Minority	18.5 (17)
Nutrition Instructors (N=16)	
Gender	% (n)
Female	87.5 (14)
Male	12.5 (2)
Year in Human Nutritional Sciences Undergraduate Program	% (n)
First Year	6.25 (1)
Second Year	25.0 (4)
Third Year	50.0 (8)
Fourth Year	18.8 (3)
Mentors (N=33)	
Gender	% (n)
Female	75.8 (25)
Male	24.2 (8)
University Program	% (n)
Arts	9.1 (3)
Nursing	6.1 (2)
Business	3.0 (1)
Human Ecology	27.2 (9)
Science	18.2 (6)
University 1	27.2 (9)
M.Sc.	3.0 (1)
Unknown	6.1 (2)
Fresh Fuel and CanU staff	
Nutrition Coordinators	n
	2
Café Assistants	n
	1

Nutrition Director	1
CanU Coordinator	1

Participant recruitment and consent

All Fresh Fuel Participants applied to *CanU* through their respective partnering schools, and were selected by school staff and *CanU*. Informed consent was obtained by parents/guardians of FFPs and ascent was obtained of FFPs prior to the commencement of *CanU*. *CanU* staff administered consent forms as part of the *CanU* recruitment packages at each participating school. The FFPs for whom consent was not provided were given alternative activities to complete during the pre/post-program data collection. All other evaluation participants provided informed consent during their respective *CanU* orientations at the University of Manitoba. Researchers were present at these orientations to administer and answer any questions about the consent forms. Participation in *CanU* and *Fresh Fuel* by the FFPs, volunteers, practicum students and staff was not limited by their involvement in this evaluation.

Ethics

Ethics approval was obtained through the University of Manitoba Research Ethics Board prior to beginning the evaluation. As minors were involved the researchers obtained Criminal Record Checks as well. Data were stored in a locked filing cabinet in Human Ecology Building (Rm. 418) or partitioned in a password-protected computer drive to which only the principal researcher had access.

An attempt was made to ensure data was reported anonymously by aggregating findings at the group level. However, key informant interviews and certain questionnaire responses resulted in reduced anonymity due to the presence of a few or only one individual under each job title. Therefore, member checking was conducted before findings were reported.

Compensation

The FFPs, both consenting and non-consenting, were provided small tokens in the form of goody bags filled with a juice box and granola bar, and some toys (e.g. pens/pencils, stickers, erasers etc.). Focus group participants were offered snacks during the focus groups. Lastly, key informants were compensated with a \$10 gift certificate for their participation as well as a small snack during interviews.

Data collection

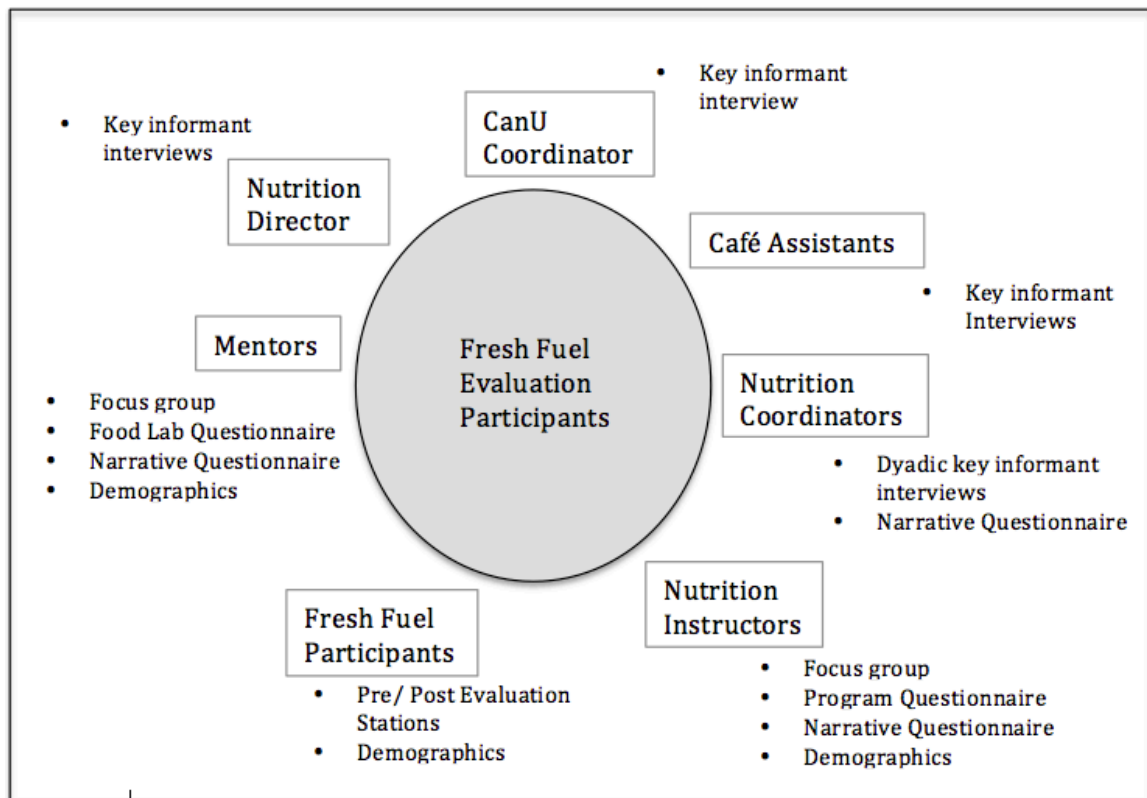
Specific methods included pre/post-program questionnaires (“Evaluation Stations”), multiple other questionnaires at various periods throughout the program, and follow-up focus groups and key informant interviews. The principle researcher also kept a reflexive journal. A reflexive journal was used to “emphasize the importance of self-awareness...and ownership of one’s own perspective” (Patton, 2011, p.55). Therefore, throughout the evaluation process the principle researcher documented important ideas, impressions and thoughts. Tools were designed to allow for triangulation, which the case study approach and the Utilization-Focused Evaluation framework agree strengthen validity of findings (Yin, 2014; Patton, 2011).

The researchers administered the pre/post-program questionnaire Evaluation Stations with the assistance of the practicum students, volunteers and the Nutrition Director. Assistance increased efficiency of administrating the evaluation tools and allowed for clarification of any questions the FFPs had, which were expected to improve response rates.

Data collection tools. Multiple instruments were administered to evaluation participants, specific to their roles in *CanU* (See Figure 2). Tools were developed to

target specific indicators that were defined in the evaluation framework (See Appendix C for data collection tools).

Figure 2. Evaluation participants and data collection tools.



Specifically:

a) *Demographic Data:*

Demographic data was collected by *CanU* and was used in this evaluation to describe FFPs, Mentors and Nutrition Instructors.

b) *Food Lab Questionnaire:*

Mentor experiences in the *Food Lab* with FFPs were captured through brief questionnaires with seven rating scale questions, which asked about FFP food

knowledge, enjoyment and social interactions. Mentors were selected because they had the most interaction with FFPs. The questionnaires were administered at the beginning (1st session), middle (4th or 5th session) and end (7th or 8th session) of the program. Since Mentors were asked to describe their experiences and were not research assistants observing the FFPs, both consenting and non-consenting FFPs were described. Food Lab Questionnaire response rates reflected the teams created in the *Food Labs*, the addition of non-participating Mentors and/or absence of any Mentors and/or FFPs. All these factors could have influenced which FFP and how many FFPs a Mentor was with at a table during a particular data collection period.

c) *Program Questionnaire:*

A short questionnaire with three open-ended questions, 1) what worked well, 2) what were some improvements, and 3) what were some challenges, allowed Nutrition Instructors the opportunity to reflect on *Food Lab* sessions. Nutrition Instructors administered the lesson plans and interacted with FFPs; therefore, they had the most insight on what worked and what did not in the *Food Labs*. The Program Questionnaire was administered on the same days as the Food Lab Questionnaire but it was administered electronically after the end of the session, so that Nutrition Instructors would have more time to reflect on a session and did not have to commit more time in the *Food Lab*. Up to a maximum of 25 responses were possible in one data collection period because each period encompassed three days of *Fresh Fuel* due to the nature of the rotation of FFPs. Response rates for the Program Questionnaire also reflected the attendance of Nutrition Instructors on a particular *Food Lab* session and changes in volunteer commitments.

d) “*Evaluation Stations*”:

FFPs engaged in eight to ten interactive Evaluation Stations to collect pre and/or post-program data on program impacts and FFP perceptions (see Figure 3). These innovative “stations” were a series of survey questions, which allowed for the collection of self-reported data and direct measurement of skills in a child friendly fun manner (i.e. written questions, matching games and tasks that were observed). Specifically, data about knowledge and skill improvement, program enjoyment and to a lesser degree behavior changes were examined.

The Evaluation Stations optimized the limited time available for data collection. The engagement of FFPs in a fun manner was especially important because the pre-program data collection acted as a *Fresh Fuel* orientation; therefore, it was important to build hope and motivate FFPs for the upcoming program (in line with *CanU*’s program basis). Ensuring the Evaluation Stations were within the theoretical context of the program was also important in preventing negative impacts on the program by the evaluation.

The orientation “Kick-off” and last *Fresh Fuel* session (8th or 9th session) were selected to administer the Evaluation Stations. Each station had it’s own answer box to enhance confidentiality and anonymity. Also, tri-fold poster board functioned as dividers to allow for further privacy. The researchers in conjunction with the assistance of the staff, practicum students and volunteers administered the Evaluation Stations. Nutrition Coordinators and Nutrition Instructors were trained on how to answer FFP questions during data collection and the Nutrition Director assisted in ensuring the Evaluation

Stations were conducted in a timely manner, so the evaluation did not take away from *CanU* programming.

Figure 3. Pictures of two Evaluation Stations: ‘Food Groups’ and ‘Bingo’



e) Mentor and Nutrition Instructor focus groups:

Program volunteers, Mentors, and Nutrition Instructors jointly participated in three semi-structured focus groups after the program ended, as different points of view facilitated a richer discussion. These focus groups were an opportunity for participants to describe their experiences as well as a platform to share stories. The principle researcher conducted all focus groups with an assistant who debriefed with the principle researcher. Focus groups varied in length from 30 to 45 minutes, and included 4 to 8 participants.

f) Mentor, Nutrition Instructor and Nutrition Coordinator Narrative Questionnaires:

Participants completed electronic short open-ended narratives, 1) one on program experiences with FFPs and 2) the other on personal program impacts. These were completed immediately after the program ended. These participants were selected

because they interacted with FFPs, and *CanU* strives to positively impact their student volunteers and practicum students.

g) Key informant interviews with the Nutrition Director, Nutrition Coordinators, Café Assistants and CanU Coordinator:

Semi-structured key informant interviews were conducted to allow participants an opportunity to reflect on their program roles and experiences. The Nutrition Coordinators participated in a dyadic interview while the Café Assistants were engaged in individual interviews because the Nutrition Coordinators actively worked together while the Café Assistants did not. The principle researcher facilitated these key informant interviews after the completion of *Fresh Fuel* programming. Second short follow-up interviews with the Nutrition Coordinators and the Nutrition Director were also conducted to further clarify responses.

Data collection tools for the *CanU Café* were developed to triangulate findings from key informant interviews; however, FFPs received inconsistent exposure to the *CanU Café*. As there was a lack of time to modify these tools they were excluded from the evaluation.

Data analysis

Data analysis was completed over a 5-month period to determine descriptive statistics for quantitative data; thematic analysis was conducted for qualitative data.

Quantitative data. Descriptive statistics were calculated using Excel, and SPSS Version 22 for Mac software (IBM Corp., Armonk, NY). Univariate statistics (cumulative distributions) and descriptive statistics (percentage) were derived, as evaluation participants were not matched due to logistical and time constraints. This

approach was suitable, as examining program outcomes was not the primary focus of this evaluation. Blank responses to a question with a clear incorrect option were coded as incorrect responses, and blank responses on a rating scale were coded *I'm not sure* or *Can't say*. Short open-ended responses were coded and tallied to determine the percentage of responses.

Qualitative data. Qualitative data was collected through oral means and responses to longer open-ended questionnaire questions. Oral data from key informant interviews and focus groups were recorded digitally and transcribed verbatim. Immediately after the focus groups the principal researcher discussed thoughts and impressions with the assistant, who was present during each focus group. After the focus groups and key informant interviews the principal researcher wrote field notes and reflective memos.

The principal researcher, with the guidance of the Faculty Advisor, transcribed all interviews and focus groups. Transcripts were reviewed several times for accuracy by the principal researcher. This in-depth process from transcribing to rereading the transcripts allowed the principal researcher to become immersed in the data (Creswell, 2103).

The principle researcher conducted thematic coding following the spiral data analysis method discussed by Creswell (2013), which stresses that analysis is a reiterative nonlinear process with a set of interrelated steps. Coding was initially conducted by hand directly on the transcripts where memos of initial reflections were written (Creswell, 2013). Next, tables on Microsoft Word with codes, categories and themes were made. Codes from all qualitative data were then placed in an Excel spreadsheet to ensure

accuracy of codes and themes between transcripts. Lastly, a final table representing the data was developed (Creswell, 2013).

Validity

Face validity was determined for all instruments. “Face validity concerns the extent to which an instrument looks as if it measures what it is intended to measure” (Patton, 2011, p. 274). Face validity was conducted by pilot testing the Evaluation Stations with children (n=2) of similar ages as the Fresh Fuel Participants. Specifically, questions designed for the Evaluation Stations were administered to the children, who were instructed to answer these questions and explain any difficulties. As a result of face validity testing, pre/ and post-program questions were refined and improved. The evaluation team and the Nutrition Coordinators examined the face validity of other evaluation tools.

Triangulating data was another means by which validity was enhanced in this research evaluation (Creswell, 2013). This evaluation triangulated data from different sources to enhance depth of findings (Creswell, 2013). For instance, volunteers, practicum students and staff perspectives were included in examining program challenges, suggested areas for improvement and positive aspects. Also, quantitative data was triangulated with qualitative data (Patton, 2011); specifically, questionnaire data was triangulated with focus group and/ or key informant interview data to examine program outcomes. According to Yin (2014) triangulation helps to strengthen the construct validity in a case study. Additionally, qualitative data peer debriefing, with the Faculty Advisor is similar to interrater reliability was used (Creswell, 2013). A “peer debriefer [acts] as a ‘devil’s advocate’... [and] asks hard questions about methods, meanings, and

interpretations” (Creswell, 2013). Lastly, member checking was done, which is an important step in determining credibility in qualitative research and allows participants the opportunity to ensure accuracy of findings (Creswell, 2013). The principal researcher met each key informant who participated in an interview, to allow participants the opportunity to examine and approve potential quotes.

CHAPTER 4—RESULTS

This research evaluation project had a formative evaluation focus, and was conducted mainly to determine which program components worked well, which were challenging and/or to explore suggestions to improve *Fresh Fuel* by program volunteers, practicum students and staff. This evaluation also had a summative purpose through the examination of short-term program outcomes for Fresh Fuel Participants (FFPs), as well as benefits to volunteers/practicum students. Summative results suggested that the program achieved several objectives; there were modest gains in knowledge and skills related to food and nutrition. Additionally, positive attitudes about food, and positive behaviors in food and eating were evident. Also, *Fresh Fuel* was fun and resulted in social benefits. Lastly, both volunteers and practicum students received benefits from their participation in *Fresh Fuel*. Formative evaluation results also pointed to a number of areas that were challenging, mainly time limitations in both the *CanU Café* and the *Food Lab*; inconsistent program implementation in the *Food Lab*; and a mismatch in goals and foods in *Fresh Fuel*. On the other hand food preparation activities were seen as good tools to provide nutrition education in the Food Lab.

Summative results from this pilot evaluation suggested that there were some gains in food and nutrition outcomes and social benefits, and evidence that *Fresh Fuel* was fun for FFPs. There were also volunteer and practicum student benefits. There were some pre/ post-program gains in knowledge such as a modest increase in food group knowledge; however, other variables had little to no gain. Also, there were increasing trends in: familiarity with foods; food preparation techniques; and food safety techniques. Many FFPs self-reported knowledge gains in cooking, knowledge about foods and how

to be healthy, while some volunteers also noticed knowledge gains in FFPs. Skill gains were also reported by volunteers and self-reported by FFPs. Also, there was a modest increase in pre/ post-program food measuring skills.

Most FFPs self-reported trying new foods in *Fresh Fuel*, and a few FFPs identified changes that were made at home. Some volunteers also noted that FFPs tried new foods, and stated that attitudes and behaviors about food and eating changed; however, a couple of volunteers believed that no behavior changes at home occurred.

There were increasing trends in program enjoyment; focusing on tasks; and interaction with Mentors and peers. Volunteers indicated that FFPs had fun, as well as gained social benefits such as bonding and engaging in teamwork. Most FFPs self-reported a desire to come back for a second year and many FFPs had no *Fresh Fuel* dislikes; however, a few disliked the foods. Lastly, volunteers and practicum students benefited from their involvement in *Fresh Fuel* with career and skills gains/refinement being the most notable benefits.

Formative results suggested that there were many positive program components as well as challenges and areas for improvements. For the *Food Lab*, time, implementation of the program, nutrition education, aspects of foods, program exposure and space were areas identified as needing improvements and/or were challenging; while positive characteristics of the nutrition education, foods and implementation of the program were also identified.

For the *CanU Café*, time, space, aspects of foods, and the *Mobile CanU Café* were identified as challenging and/or needing improvement; while aspects of foods and program implementation were positively identified.

Lastly, participants commented on *Fresh Fuel* as a whole. Competing goals, feeding FFPs and providing nutrition education, were identified, and participants noticed a difference between the foods (i.e. nutritional content) in the *CanU Café* and *Food Labs*. Also, the connection between the *CanU Café* and the *Food Lab* was a new positive development in the 2013-2014 program period. Lastly, participants noticed a need to find a better method to allow FFPs to take food home.

Results are organized to answer the seven research questions (Table 2), which the evaluation team identified through a collaborative process. Results were analyzed and synthesized from the various data collected, and where possible qualitative data is reported as a group, while quantitative data is individually reported.

Table 2

Research Questions and Data Instruments

Q1: Are Fresh Fuel Participants gaining knowledge in food, nutrition and safety?

1. Mentor Food Lab Questionnaire (FQ)
2. Mentor and Nutrition Instructor focus groups (FG)
3. FFP Evaluation Stations (ES)
 - a. 'Food Groups' (matching common foods to their food groups)
 - b. 'How sweet is this' (matching amounts of sugar to packaged beverages)
 - c. 'Risky chef' (identifying safety hazards in the kitchen)
 - d. 'What's healthier' (choosing between two snacks)
 - e. 'Name that food' (identifying common fruits and vegetables)
 - f. 'Lets Learn' (identifying what FFPs wanted to learn and what they learned)

Q2: Are Fresh Fuel Participants gaining skill in food, nutrition and safety?

1. FG
2. ES
 - a. 'Recipe time' (measuring certain amounts of sugar and water)
 - b. 'Lets Learn' (identifying what FFPs learned)

Q3: Have Fresh Fuel Participants changed their attitudes or behaviors towards food and eating?

1. FG
2. Mentor, Nutrition Instructor and Nutrition Coordinator Narrative Questionnaire (NQ)
3. ES
 - a. 'Bingo' (identifying changes made at home)

Q4: Are Fresh Fuel Participants having fun?

1. FQ
2. FG
3. ES
 - a. 'Bingo' (identifying a desire to come back to *Fresh Fuel*)
 - b. 'Help CanU Grow' (identifying aspects of *Fresh Fuel* that were liked and not liked)
4. NQ

Q5: Are Fresh Fuel Participants benefiting socially?

1. FQ
2. FG
3. NQ
4. Nutrition Director dyadic key informant interview (ND)
5. Nutrition Coordinator key informant interview (NC)
6. Café Assistant key informant interviews (CA)

Q6: How have volunteers, and practicum students benefited?

1. FG
2. NQ

Q7: What program elements are most effective, and what changes would make the program run more effectively?

1. FG
 2. CA
 3. NC
 4. ND
 5. CanU Coordinator key informant interview (CC)
 6. Nutrition Instructor Program Questionnaire (PQ)
-

Research Q1: Are Fresh Fuel Participants gaining knowledge in food, nutrition and safety?

Results suggested gains in some areas of FFP food and nutrition knowledge but not in others. Descriptions by *Fresh Fuel* volunteers indicated some knowledge gains. In general, trends in familiarity with foods increased from the beginning, middle and end of the program, while familiarity with food preparation and food safety techniques increased from the beginning to middle of the program. There was a modest pre/post-program increase in food group knowledge, while only minimal pre/ post-program increases were seen in food safety, and identifying healthy foods and fruit/vegetable. No knowledge gains were seen in sugar content of food items and kitchen safety. Nevertheless, FFPs identified that they learned how to cook, about being healthy, and about foods and their nutritional content.

Focus group results indicated that some volunteers noticed gains in FFP food and nutrition knowledge (Table 3). This was evident from focus group data where the theme *Program impacts on children* emerged.

Table 3

Fresh Fuel Participant Food and Nutrition Knowledge Gains: Focus Group (FG) Results

“A game was involved, it had to do with the sodium contents of food. Some kids were really shocked to realize that they actually go way above the requirements. It was really an educational part of the program that was really impactful.”_(FG)

“It’s cool when they come to me after and be like, ‘oh we’re eating this food group now!’ So it’s cool to see how they actually apply the knowledge that we taught them.”_(FG)

Data indicated that familiarity with foods, food preparation and food safety during the *Food Lab* increased. Mentors reported that from the beginning to the end of the

program, the percentage of FFPs *often* familiar with the foods (Figure 4) increased. Increasing trends were also seen between the beginning to middle of the program in familiarity with food safety techniques (Figure 5) and preparation techniques (Figure 6).

Figure 4. Fresh Fuel Participants' familiarity with foods at three data collection periods.

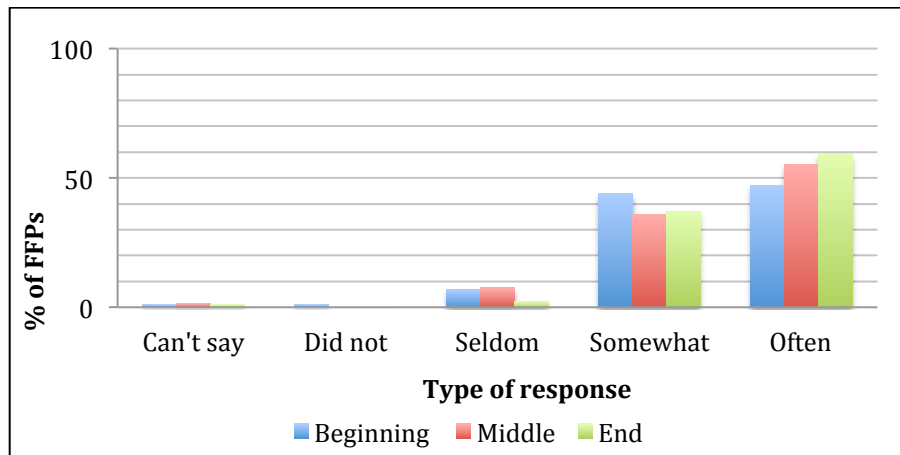


Figure 5. Fresh Fuel Participants' familiarity of food safety techniques at three data collection periods.

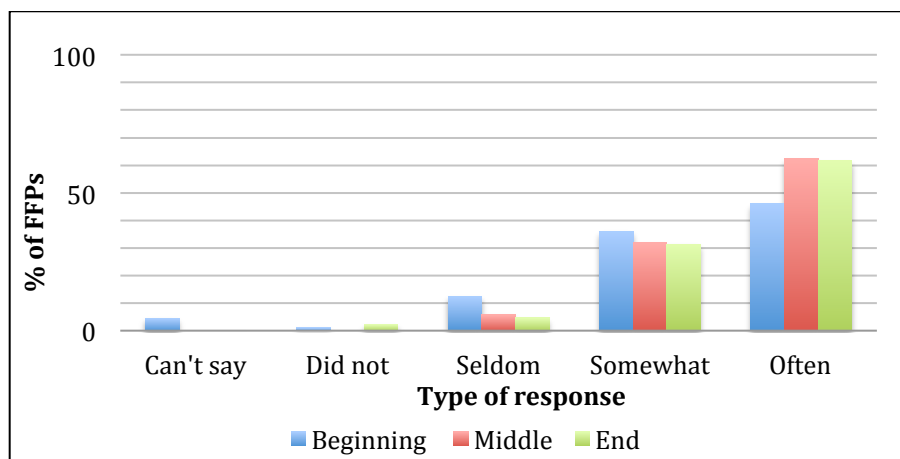
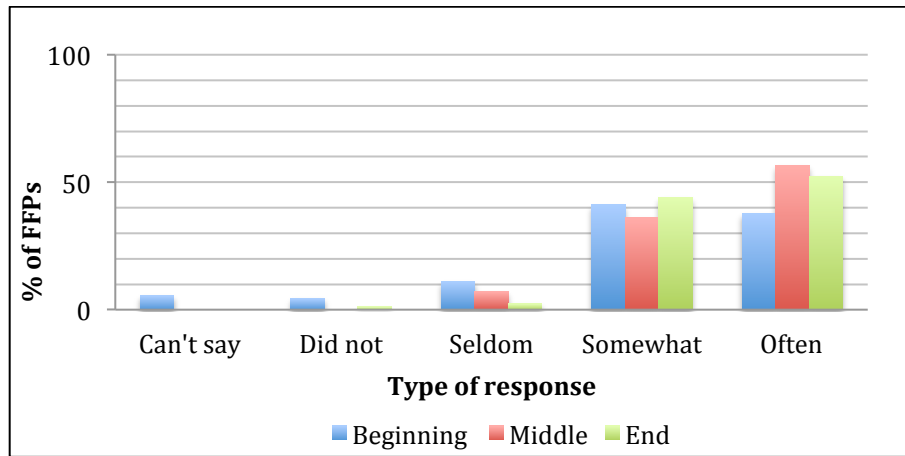


Figure 6. Fresh Fuel Participants' familiarity of basic food preparation techniques at three data collection periods.



Results from six Evaluation Stations indicated modest gains in some areas of food, nutrition and safety knowledge while others showed small to no changes (Table 4)¹. In particular, there was a 10.9% increase in Food Group knowledge.

¹ Several factors lead to the decision to not assess statistical significance of pre/post-program changes. Matching FFPs between pre-program to post-program Evaluation Stations was not possible as there were time restrictions due to delays in obtaining consent forms and FFPs arriving late. Determining general trends was also considered the most appropriate approach because the researchers were not responsible for program development and implementation; therefore, there was potential for mismatch between questions asked on the pre/post-program Evaluation Stations, and programming.

Table 4

Fresh Fuel Participant Self-reported Food and Nutrition Knowledge Gains: Six Evaluation Stations

Evaluation Station	Variable	Pre-program (N=86)	Post-program (N=83)
		% meeting criteria	% meeting criteria
Food Groups	≥3 correct out of a total of 4	64.7	75.6
How Sweet is This	≥4 correct out of a total of 5	29.1	25.3
Risky chefs	≥5 correct out of a total of 6	49.4	48.8
What is healthier	4 correct out of a total of 4	64.0	67.1
Name that food	4 correct out of a total of 4	68.2	69.9
Eating an apple	1 correct out of a total of 1	88.4	91.5

N= FFP sample size at each point of data collection

In response to the pre-program question of what FFPs wanted to learn at Fresh Fuel, about two-thirds of FFPs indicated a desire to learn how to cook, and some FFPs indicated a desire to learn about foods and their nutritional content, to be healthier and try new foods. In response to the post-program question of what FFPs learned at *Fresh Fuel*, almost half of the FFPs indicated that they learned how to cook, and some FFPs indicated that they learned to be healthier, and about foods and nutritional content (Table 5). This shows that there was some knowledge gain in topics that FFPs identified wanting to learn about but quite a few FFPs did not identify learning what they wanted to.

Table 5

Fresh Fuel Participant Self-reported Food and Nutrition Knowledge Gains: 'Lets Learn' Evaluation Station

Pre-program (N=86)		Post-program (N=83)	
Results (%)	Quotes	Results (%)	Quotes
Wanted to learn how to cook (63.4%)	“I would like to learn how to cook different things and eat different things that I never tried”	Learned how to cook (44.4%)	“What a simmer is, it is little bubbles in boiled water”
Wanted to learn about foods and nutritional content of foods (34.1%)	“I would like to learn, do veggies have any sugar like the sugar in candy?”	Learned about foods and nutritional content of foods (16.0%)	“I learned about different foods and vegetables”
Indicated a desire to be healthier (13.4%)	“I also want to learn how to live a more healthy lifestyle and choose healthy foods”	Learned to be healthier (19.8%)	“I learned that eating healthy is very important for your body”
		Learned about food safety (4.9%)	“You got to wash your hands before cooking.”

N= FFP sample size at each point of data collection

Research Q2: Are FFPs gaining skill in food, nutrition and safety?

Some volunteers noticed that FFPs improved in skills. There was evidence of a modest pre/post-program improvement in measuring food items and some FFP also self-reported a gain in skills.

Responses from volunteers in the focus groups indicated gains in food and nutrition skills (Table 6).

Table 6

Fresh Fuel Participant Food and Nutrition Skill Gains: Focus Group (FG) Results

<p>“I was skeptical the first couple of weeks and having them handle sharp knives...having hard things to cut, like carrots and different things but it was amazing, they were so good at it.”_(FG)</p>
<p>“It was interesting to see the skills that they learned over the program, like when we focused on cutting and stuff they would come back the next week and they’d actually be really good at it so.... it was nice to see that what we taught them they were putting it into action.”_(FG)</p>

Results from two pre-/post-program stations indicated a modest gain in some areas of food, nutrition and safety skills. There was a 16.5% pre-/post-program increase in the percentage of FFPs correctly using measuring utensils (Table 7), and in response to the post-program question of what FFPs learned at *Fresh Fuel*, a skill gain was identified in 13.6% of responses (Table 8).

Table 7

Fresh Fuel Participant Food and Nutrition Skill Gains: 'Recipe time' Evaluation Station

ES	Number of correct measurements out of possibilities	Pre-program (N=86)	Post-program (N=83)
		% meeting criteria	% meeting criteria
Recipe time	2 correct out of a total of 2	23.3	39.8

N= FFP sample size at each point of data collection

Table 8

Fresh Fuel Participant Self-reported Food and Nutrition Skill Gains: 'Lets Learn' Evaluation Station

Results (N=83) (%)	Quotes
13.6% indicated a gain in skills	“Another thing I learned was how to use the oven to cook food.” _(ES)
	“I learned how to measure.” _(ES)
	“I learned how to use/hold a knife right.” _(ES)

N= FFP sample size at post program data collection

Research Q3: Have FFPs changed their attitudes or behaviors towards food and eating?

Participation in *Fresh Fuel* resulted in some positive impacts on attitudes and behavior of Fresh Fuel Participants (FFPs). This was noticed by *Fresh Fuel* volunteers and seen in pre/post-program changes.

Attitudes and/or behavior changes emerged from the focus group and Narrative Questionnaire data (Table 9). Some participants stated that FFPs were willing to make changes at home and were interested in cooking during the *Food Lab*. Also, some participants stated that FFPs reported that they made changes at home, such as making recipes that were made in *Fresh Fuel* at home. However, a few participants recalled instances where FFPs informed them that no changes were made at home and one reason that was offered for this was that parents were not involved. Lastly, a few participants noted that FFPs were increasingly trying new foods in the *Food Lab*.

Table 9

Changes in Fresh Fuel Participant Attitudes and Behavior Related to Food and Nutrition: Focus Group (FG) and Narrative Questionnaire (NQ) Results

Sub-themes	Quotes
Attitudes	<p>“One of the participants was telling me how they were going to ask their siblings to help them prepare a similar meal for their parents.” (NQ)</p> <p>“A lot of times after, the kids would say, ‘I want to make this at home.’ Or ‘where do I buy the ingredients?’ Or ‘how can I make this for my family?’” And I thought that was really cool that they showed an interest to take it home with them.” (FG)</p>
Behavior changes	<p>“After drinking cucumber water one week...one of the participants told me that she had started keeping cucumber water in the fridge for the whole family to enjoy. This made me feel like I was actually having an impact on the participants lives.” (NQ)</p> <p>“I had a little girl come up to me after Christmas break and tell me that they tried a few of the recipes and that she’d actually been helping her mom cook. And...she told her mom how to make the stir-fry” (FG)</p> <p>“One memorable event that I recall from CanU would be one of the participants trying a type of food that they had never had before. They were not very eager to try the food but they did it anyway and ended up really enjoying it. I noticed that a lot of the kids were tasting things that they had never had/heard of before.” (NQ)</p> <p>“I kept being, “oh, are you telling your parents what you’re making?”...[S]he said she would tell them every time but then it didn’t really ever seem to change her eating habits...I guess, it wasn’t really translating through with her parents because she was still eating all the same stuff.” (FG)</p> <p>“You’d ask the kids if they ever had this and they would be like, ‘no, my mom doesn’t buy that stuff.’ Or like, “no, I’ve never my mom doesn’t cook with me.’ Or, ‘I don’t get the chance to do this.’ And...you could tell that they really wanted to do that kind of stuff at home and go home and be like, ‘mom, look what I made or dad.’” (FG)</p>

Results from the ‘Bingo’ Evaluation Station indicated that there were changes in behavior relating to food and eating at *Fresh Fuel* and at home.

- 86.6% of FFPs tried new foods in *Fresh Fuel*
- 36.6% of FFPs made changes at home because of something they learned in *Fresh Fuel*. Interestingly, one FFP stated that they did not make any changes because of their parents. Specific changes are listed in Table 10.

Table 10

Fresh Fuel Participant Self-reported Changes at Home: ‘Bingo’ Evaluation Station

Results	(%)	(n)	Quotes
Cooked more	42.1	8	“I started cooking my own food” ^(ES)
Healthier	26.3	5	“I don’t eat food that has too much salt than what your body needs.” ^(ES)
Taught parents	10.5	3	
Skills	5.3	1	“What we were eating at home was not healthy.” ^(ES)
Knowledge	5.3	1	“Taught my mom some of the recipes.” ^(ES)
Parents didn’t change	5.3	1	“No. My mom stuck with her natural stuff.” ^(ES)

n= # of responses

Research Q4: Are FFPs having fun?

Results indicated that the majority of FFPs enjoyed themselves in the program. Volunteers noticed that FFPs had fun, and many FFP responses suggested that *Fresh Fuel* was liked. This was supported through focus group data and Narrative Questionnaire responses (Table 11).

Table 11

Fresh Fuel Participants Experiencing Fun: Focus Group (FG) and Narrative Questionnaire (NQ) Results

“The satisfaction that the kids have that they, even [though] they didn’t pick what they were making they helped make it and they get to eat it too so it’s the full you know generally feel[ing] satisfied that they helped out with that” (FG)

“One memorable event that happened between me and a participant...I started talking to them asking them about the food and added some jokes. She started to laugh at them...and I continued on joking around and she just kept cracking up! It was such a fun-filled day!” (NQ)

“In many of the sessions I noticed how several of the kids in my group grew more confident and excited about cooking. One participant in particular was incredibly enthusiastic about using the stovetop and flipping the food we were cooking at that time as well as getting creative about garnishes for the plate. In that particular session, the kids were very positive and enthusiastic and it made the session fly by because they were having so much fun with it.” (NQ)

Data indicated that FFP enjoyment in the program and ability to focus on tasks increased. Mentors reported that from the beginning to the end of the *Food Lab* the percentage of FFPs *often* enjoying themselves (Figure 7), and the percentage of FFPs *often* focusing on a session increased (Figure 8).

Figure 7. Fresh Fuel Participants' enjoyment at three data collection periods.

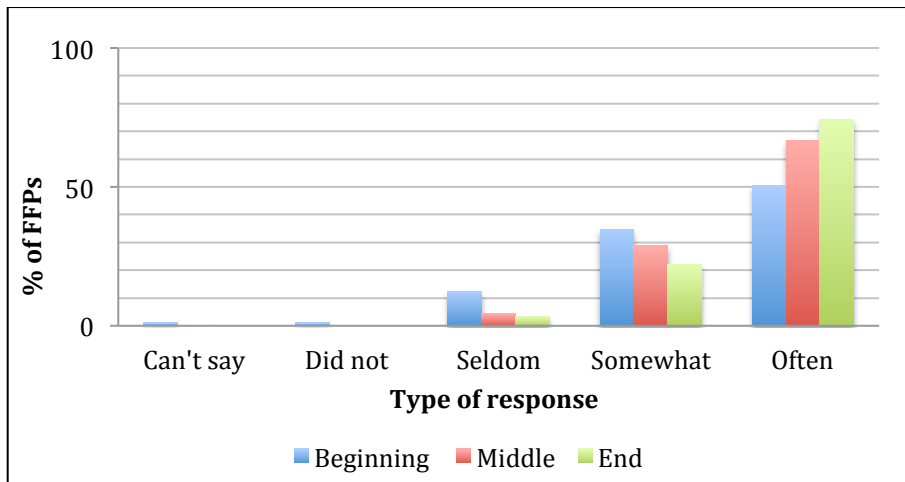
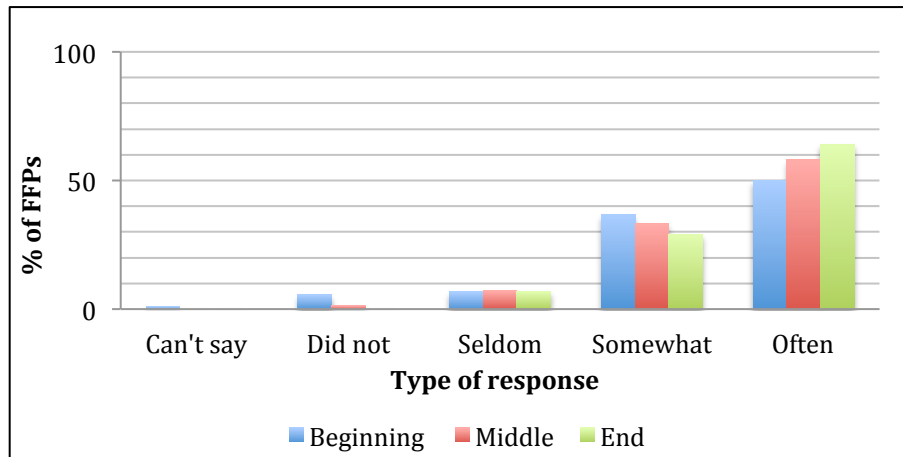


Figure 8. Fresh Fuel Participants' focusing on tasks at three data collection periods.



Post-program results indicated that FFPs had fun.

- 74.4% of FFPs indicated *Yes* to the 'Bingo' Evaluation Station, which asked about a desire to come back the following year.
- The post-program responses to the 'Help CanU Grow' Evaluation Station indicated that the main aspect of *Fresh Fuel* disliked by some FFPs were certain foods (Table 12). Interestingly, one Fresh FFP did not like the inconsistent exposure to the *CanU Café*.

Table 12

Fresh Fuel Participant Self-reported Program Likes and Dislikes: 'Help CanU Grow' Evaluation Station

Likes (N=83)		Dislikes (N=83)	
Results (%)	Quotes	Results (%)	Quotes
Eating the foods (50.6%)	“I liked the pizza and the tacos they were so good and yummy” ^(ES)	Had no dislikes or liked everything (43.2%)	“That we ate not really yummy food” ^(ES)
Cooking (34.6%)		Certain foods (33.3%)	“It was homemade because it didn’t taste as good and there were vegetables that I don’t like” ^(ES)
Everything (12.3%)	“I really liked cooking and most of all eating what I made” ^(ES)	Waiting for food to cook (2.5%)	“I didn’t like that we didn’t get enough CanU Cafe every one else got lots except us” ^(ES)
Being healthy (7.4%)		Not enough CanU café (1.2%)	
Trying new foods (2.5%)	“I liked making my own food” ^(ES)		
The food contest (2.5%)			

N= FFP sample size at post program data collection

Research Q5: Are FFPs receiving benefiting socially?

Results from volunteers, practicum students and staff indicated that FFPs gained social benefits during the program, specifically bonding with peers and volunteers.

Data from focus groups, Narrative Questionnaires, the Café Assistant and Nutrition Director interviews indicated that bonding with others in the *Food Lab* and the *CanU Café* occurred (Table 13). Participants stated that there was strong evidence of bonding between Mentors and FFPs in the *CanU Café*, as well as evidence of bonding between FFPs and volunteers in the *Food Lab*. Group bonding in the *Food Lab* enhanced the interaction between FFPs, and helped facilitate food and nutrition discussions. A participant even stated that there were more opportunities for bonding in *Fresh Fuel* than in the previous years. Lastly, a few participants noticed that with each *Food Lab*, FFPs were more comfortable and were engaging more in the *Food Labs*.

In addition to bonding, several participants stated that teamwork between FFPs was evident in the *Food Lab*.

Table 13

Fresh Fuel Participants Socially Benefiting: Focus Group (FG), Key Informant Interview (ND and CA), and Narrative Questionnaire (NQ) Results

Sub-themes	Quotes
Bonding	“Two girls in my group who were working together...and one of them said to me, ‘isn’t this awesome? I just met her and we’re already friends.’” (FG)
	“When they did get to know me and they felt like they could trust me it was a lot easier for me to be like, ‘you should try this.’” (FG)
	“Talking to one individual in the café was great as they got comfortable to open up to me about things that interested them.” (NQ)
	“A lot of the [other CanU] activities, I mean you were there but...the kids were off doing their own thing and you were kind of welcome to join or stay back and...the Café...was the one place where...you’d be in the same space and the same time.” (FG)
	“The way that the [CanU Café] room was set up with the tablecloths it...almost felt like you were sitting down to eat with your family. It wasn’t formal...but it was nicely set up and having the music on in the background and I think it just really gave the kids an opportunity to talk to each other, talk to their Mentors.” (CA)
Teamwork	“They got to sit down [in the CanU Café] and...we’re so disassociated from the traditional way of sitting down at the dinner table.” (FG)
	“[In] one of the last sessions our group was very focused and had an amazing dynamic...[because] all of the group members were engaged in making the food.” (NQ)
	“This is the first year that I have seen for almost every week that the kids actually got to sit down in the lab with their groups and actually have a nice conversation with their Nutrition Instructors, their groups and their Mentors, which is something that usually wasn’t happening in the lab before.” (ND)
	“I had 3 boys in my group who were pretty rambunctious...So throughout the session I was continually assigning them jobs...As I took a step back to observe them, I honestly can’t describe how happy I was to see them all so focused, and putting so much effort into working together to finish the recipe...[T]he way they work together, the sense of accomplishment I can see in the kids eyes when they’re done it was amazing.” (NQ)

Mentor descriptions of *Food Lab* sessions from the beginning to end of the program indicated that the percentage of FFPs *often* interacting with Mentors (Figure 9) and other FFPs (Figure 10) increased. Specifically, FFPs were *often* interacting with Mentors to a greater extent at the end of the program compared to the other two data collection periods and compared to interacting with other FFPs.

Figure 9. Fresh Fuel Participants' interacting with Mentors at three data collection periods.

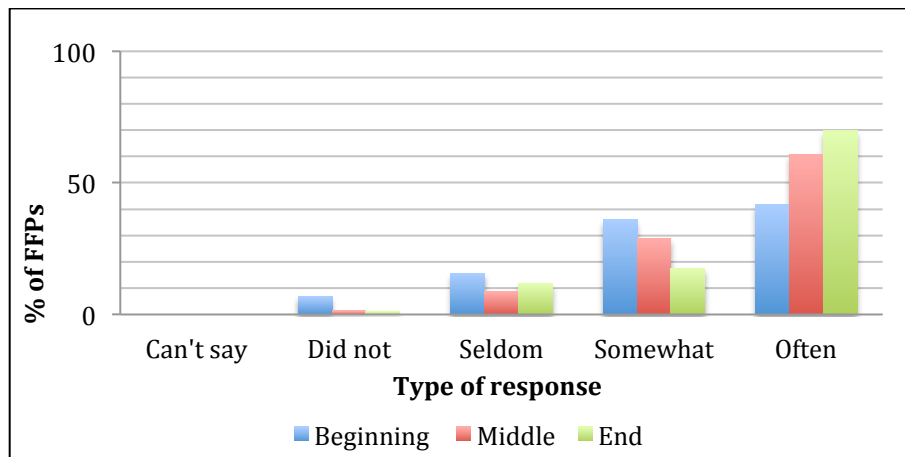
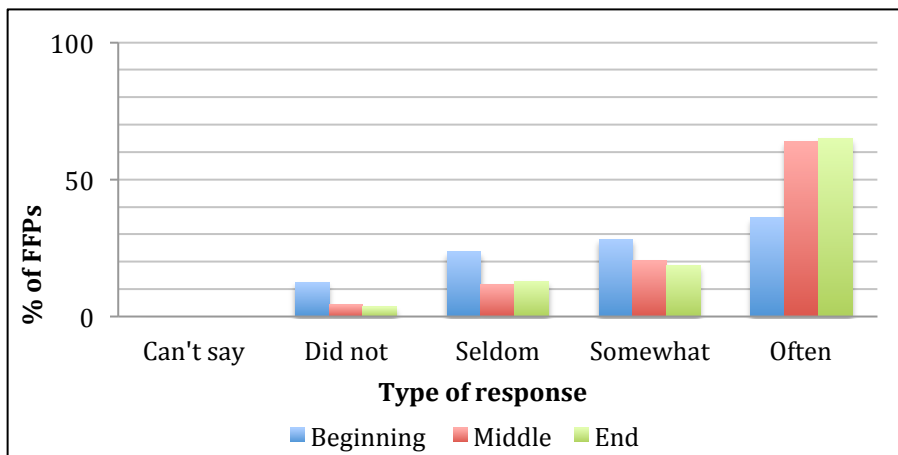


Figure 10. Fresh Fuel Participants' interacting with peers at three data collection periods.



Research Q6: How have volunteers and practicum students benefited?

Volunteers and practicum students described several benefits. The main benefits that were described were career development, specifically with respect to working with children, and gaining/refining skills.

Most Mentor Narrative Questionnaire responses described how participating in *Fresh Fuel* helped to develop career paths. Interestingly, some of those responses identified a newfound desire to find careers working with children. Also, participation in *Fresh Fuel* allowed others to reaffirm academic/career goals. Some Mentor responses indicated a skills benefit, with learning to teach children being the most prominent. Some Mentors also stated that volunteering in *Fresh Fuel* enabled them to meet other university students. Also, bonding with the FFPs led to a greater appreciation of the challenges vulnerable children faced and there was an appreciation for the opportunity to help children learn and make an impact.

Unlike Mentors only a few Nutrition Instructor Narrative Questionnaire responses described participation in *Fresh Fuel* as beneficial for future careers. Most Nutrition Instructors described a skills gain/refinement, especially skills in teaching children. Some Nutrition Instructors also stated that volunteering in *Fresh Fuel* enabled them to meet other university students. In addition, bonding with the FFPs led to a greater appreciation of the challenges that disadvantaged children faced and there was an appreciation for the opportunity to help children learn and make an impact. Other benefits are also outlined in Table 14.

Both Nutrition Coordinator Narrative Questionnaire and Nutrition Coordinator key informant interview data stated a skills benefit particularly in relation to teaching

children. However, a Nutrition Coordinator also described becoming more interested in working in community nutrition and being able to make an impact on a child's life.

During the focus groups some volunteers explained that they gained skills; specifically, they learned to teach children. Also, a few volunteers stated that participating in *Fresh Fuel* was a learning opportunity and that they had fun.

Table 14

Volunteer and Practicum Student Self-reported Benefits: Focus Group (FG), Key Informant Interview (NC) and Narrative Questionnaire (NQ) Results

Sub-themes	NQ Results (%)	Quotes from NQs, FGs and NC
		“CanU has affected me in terms of skills; it helped me have experience in how to manage the children, time and organizational skills.” ^(NQ)
	Mentors (27.3)	“[I] learned how to manage volunteers which was a great experience.” ^(NC)
Skills	Nutrition Instructors (64.3)	“[It] refreshed my memory on some of the cooking skills.” ^(FG)
	Nutrition Coordinators (100)	“I found it just helped a lot to become better at dealing with kids and knowing what kind of language you could use and how to explain things in a way they’re going to understand it versus more scientific way you might have learned in class.” ^(FG)
		“I knew I wanted to do practicum because I needed to gain those skills and experiences for the internship...I would definitely say the planning and organizing...that was what I wanted to focus on and learn.” ^(NC)
	Mentors (63.6)	“The Food Club, has made me enjoy working with children. I’ll admit, before CanU they puzzled me and I wasn’t sure I’d be able to work with them...As we worked to make food together, we learned a lot about them and their lives, their likes and dislikes, and their willingness to try new things! CanU has convinced me to work in a career with children.” ^(NQ)
Career benefits	Nutrition Instructors (14.3)	
	Nutrition Coordinators (50.0)	“Through my work with CanU I have also been able to shape my future goals as a dietitian as this program has sparked my interest in community nutrition.” ^(NQ)
Opportunity to help children learn/ make an impact on a child’s life	Mentors (27.3)	“CanU has helped me to grow as a volunteer and as a person. I loved interacting with the children and teaching them such as helpful life skill. I think it’s really important for children to learn about nutrition and healthy eating, as childhood obesity is such a growing epidemic now. It’s a great feeling knowing I’m helping the children by teaching them something that I feel very passionate about.” ^(NQ)
	Nutrition Instructors (35.7)	
	Nutrition Coordinators (50.0)	“When we were able to introduce a child to a new food or increase their interest in cooking I was able to feel proud” ^(NQ)
Network	Mentor (9.1)	
	Nutrition Instructors (21.4)	“CanU has further given me the opportunity to create valuable networks.” ^(NQ)

Increased awareness of SES issues	Mentors (27.3) Nutrition Instructors (7.1)	<p>“CanU has taught me to be more observant and more patient. There are things about the kids that I wish I had noticed sooner, for example lack of appropriate winter wear or trouble reading and writing. CanU has made me want to be more informed about services available to assist individuals and families that might be struggling. It has also taught me to appreciate the things that I have and realize how privileged my childhood was.”^(NQ)</p>
Learning opportunity	Mentors (9.1) Nutrition Instructors (7.1)	<p>“I really enjoyed it...[i]t was a good learning experience cause you never know every week could be different ...you never know what could happen so I thought it was really fun.”^(FG)</p>

Research Q7: What program elements are most effective, and what changes would make the program run more effectively?

***Food Lab* challenges/suggested improvements**

Results generated from volunteers, practicum students, and staff from the Program Questionnaire, focus groups and key informant interviews identified several challenging areas and areas for improvements. However, it is important to note that while two-thirds of Program Questionnaire respondents identified challenges at the beginning of the *Food Lab*, by the end this had reduced to almost half of respondents identifying challenges (Table 15). Specific challenges are outlined below.

Table 15

Lack of Challenges and Suggested Improvements: Program Questionnaire (PQ) Results from Three *Food Lab* Sessions

Program period	a) No challenges (%) b) No improvements (%)	Quotes
Beginning (n=21)	a) 33.3 b) 23.8	“I don’t think there is anything I would change for the future. Everything went very smoothly.” ^(PQ) “Everything ran quite smoothly.” ^(PQ)
Middle (n=17)	a) 41.2 b) 35.3	
End (n=15)	a) 53.3 b) 60.0	

n= # of answer forms

Time. Time limitations were not a major concern for Nutrition Instructors; however, 17.6% of responses in the middle of the program did cite time limitations as a challenge (Table 16). Groups were frequently late, recipes took longer than anticipated to prepare and sessions were rushed.

Table 16

Time Limitations and Suggested Improvements: Program Questionnaire (PQ)
Results from Three *Food Lab* Sessions

Program period	Challenges		Improvements		Quotes
	(%)	Topics	(%)	Topics	
Beginning (n=21)	0.0	1 st group late	0.0	Prepare some of the recipe before FFPs arrive	“It was a little bit rushed.” (PQ)
Middle (n=17)	17.6	Recipe took too long to cook	5.9		“We had a shorter prep time” (PQ)
End (n=15)	6.7	Session was rushed	0.0		

n= # of answer forms

Key informant interview and focus group participants stated that time limitations adversely impacted *Food Lab* activities (Table 17). Time restrictions limited the ability to expand on the nutrition education; time was a main consideration when developing the nutrition education lesson plans, and it limited educational activities and nutrition discussions. Sometimes meal preparation had to be completed by Nutrition Instructors before a session started and/or during a session, which deprived FFPs of a fuller experience. Also, FFPs did not always have enough time to eat. FFP groups in the first session of the day had less time than the second FFP group. Participants suggested that there should be more time in the *Food Lab*, and more time for meal preparation to facilitate greater involvement of FFPs. Also, it was suggested that there should be more time to prepare for the *Food Labs*.

Table 17

Time Limitations and Suggested Improvements: Focus Group (FG) and Key Informant interview (NC & ND) Results

Impacts	Improvements	Quotes
<p>Limited nutrition education</p> <ul style="list-style-type: none"> • Nutrition discussions <ul style="list-style-type: none"> ○ Develop less structured discussions ○ Nutrition Instructors did not always have time to ask questions • Prioritize or limit educational games/activities • Quick recipes were selected when developing lessons • Nutrition Instructors needed to do more meal preparation <p>Less time for 1st FFP group</p> <p>Eating foods rushed</p>	<ul style="list-style-type: none"> • In general more time needed • More time for volunteers to prepare for the Food Lab • More time for FFPs to engage in meal preparation 	<p>“I still was trying all year to find time and ways to include some kind of nutrition education talks... And some of it was that there just was no time and some of it was we just didn’t really plan it, we knew there wouldn’t be time.” (NC)</p> <p>“Sometimes we’d never get to some of the questions we should have been asking them.” (FG)</p> <p>“Right now we’re sometimes having to pre-prepare some of the foods... It would be great if they could come in the lab and prepare a meal from scratch and get the full view of what that is.” (ND)</p> <p>“More time for [Nutrition Instructors] to read things over would have helped.” (NC)</p>

Program implementation. Many Program Questionnaire responses identified challenges and potential improvements in program implementation at each program period (Table 18). In the beginning of the program, a few Nutrition Instructors were unsure of what to do in the *Food Lab*. Improvements included having the assistance of Mentors and having more floaters. In general there was difficulty with engaging FFPs in the sessions, specifically organizing them. Suggested improvements included being more efficient organizing the FFPs.

In the middle of the program, the main challenge was being short-staffed and one improvement was for Nutrition Instructors to be better prepared. Also, it was equally challenging when FFPs were not engaged in the session and when sessions allowed some FFPs to dominate. Assigning specific tasks to FFPs was a suggested improvement.

Lastly, at the end of the program participants found it challenging when there was a lack of Mentor assistance, and being short staffed. Greater Mentor assistance was stated as a need for improvement. A couple of responses also stated that FFPs were not engaged in the sessions and sessions allowed some FFPs to dominate. To a lesser degree other factors were also identified.

Table 18

Challenges and Suggested Improvements with Program Implementation: Program Questionnaire (PQ) Results from Three *Food Lab* Sessions

Program period	Challenges		Improvements		Quotes
	(%)	Topics	(%)	Topics	
Beginning (n=21)	57.1	Engaging FFPs <ul style="list-style-type: none"> • Not engaged • Allow some to dominate • Disorganized when enter labs • Not behaving • Language barrier 	28.6	Engaging FFPs <ul style="list-style-type: none"> • One on one interaction • Assigns tasks • Equal ingredients • Better organization 	<p>“It was just a little bit difficult to make the kids to pay attention during soup cooking procedure.” (PQ)</p> <p>“Some of the kids do not talked that much when ask a question, for example when ask what food do they like some of them does not answer or say nothing” (PQ)</p>
Middle (n=17)	35.3	Mentors <ul style="list-style-type: none"> • Lack of assistance Nutrition Instructors <ul style="list-style-type: none"> • Not sure what to do • Short staffed 	23.5	<ul style="list-style-type: none"> • Give kids more control over recipes • Plan activities while waiting Mentors <ul style="list-style-type: none"> • More assistance 	<p>“If the Mentors took initiatives [in the future] helping the children with the activities or demonstrate techniques or suggestions, or even make conversation during their activity to keep the children occupied.” (PQ)</p> <p>“I would have a slightly better way of organizing the beginning part when we're getting the children ready to bring into the lab.” (PQ)</p>
End (n=15)	33.3		20.0	Nutrition Instructors <ul style="list-style-type: none"> • Better prepared • More floaters 	<p>“Some people were particularly willing to handle almost every task. I think assigning different roles to each kid will keep everyone involved.” (PQ)</p> <p>“Have more one on one time with some of the kids who are not outgoing like some of the others.” (PQ)</p>

n= # of answer forms

The main concern in key informant interviews and focus groups was that Nutrition Instructors were not consistently implementing the *Food Lab* sessions e.g. some incorporated food and nutrition discussions while others did not (Table 19). One participant stated that without being trained, some Nutrition Instructors did not know what to do. However, another participant stated that excluding the Nutrition Instructors from the nutrition education lesson plan development in the 2013-2014 program year could have affected their implementation of the program, so in the future Nutrition Instructors could be included. Providing Nutrition Instructors with training in how to teach cooking/food skills, and ensuring that Nutrition Instructors stayed with the same group of FFPs throughout the program were some suggestions for improvement. One participant was concerned that Nutrition Instructors did not always receive support by Mentors. Several participants also indicated that FFPs did not get along with each other and sessions allowed some FFPs to dominate. One participant suggested including a “floater” to help FFPs get along with each other, and giving them more control over activities.

Table 19

Challenges and Suggested Improvements with *Food Lab* Program Implementation: Focus Group (FG) and Key Informant Interview (NC) Results

Challenges	Improvements	Quotes
Nutrition Instructors • Not consistent implementation across instructors	Nutrition Instructors • Include in the development of lesson plans • Provide training • Stay with same FFPs from the beginning to the end of the program	“The Instructor we had did the food prep and we sat around and then she was like, ‘ok, what Food Group was this? Why is this important? What does this help with?’ And actually got the kids talking. They sat down, they could concentrate and then that’s where the Nutrition aspects came into play was when we all sat down and we had time to talk about it, so I think it’s all based on the Instructor.” (FG) “Maybe do an orientation to the Nutrition Mentors first...[because] the skills are very different.” (FG) “We had a total of three different Instructors over the year... So maybe a rotational system for Instructors.” (FG)
Mentors not assisting	N/A	“The kids have a better relationship with the Mentors than they do with us. So if the Mentors were off talking about something else the kids care more about what they are doing than what we were doing.” (NC)
Engaging FFP • Allow some to dominate • Not getting along with each other	Engaging FFP • Give more control over activities • More floaters to help FFPs get along	“There was some sort of tension between two kids but they never really bothered changing the teams.” (FG) “I think it would’ve been really beneficial if the kids were able to vote on the next meals. Like have a couple of options and check off which one they want to cook next week so that they actually felt like they had some part in choosing what they were making” (FG)

Nutrition education. Few challenges with nutrition education were identified by Program Questionnaire responses but several suggestions for improvements were made (Table 20). At the beginning of the program the main improvement identified was to have deeper food and nutrition discussions. In the middle of the program, nutrition education seemed to lack direction; a main suggestion was to focus on food and nutrition discussions. Lastly, at the end of the program suggestions were made to have more complex meal preparation and involve FFPs in clean up. To a lesser degree other aspects were also identified.

Table 20

Challenges and Suggested Improvements with Nutrition Education: Program Questionnaire (PQ) Results from Three *Food Lab* Sessions

Program period	Challenges (%)	Topics	Improvements (%)	Topics	Quotes
Beginning (n=21)	0.0	<ul style="list-style-type: none"> Lacked direction 	38.1	<ul style="list-style-type: none"> More food and nutrition discussions Allow FFPs to have more meal preparation Include FFPs in clean up Focusing on nutrition content of food Encouraging FFPs to try new foods 	<p>“I will engage them more in talking about food and their food habits.” (PG)</p>
Middle (n=17)	5.9		29.4		<p>“There was a lot of down time” (PG)</p>
End (n=15)	0.0		13.3		<p>“I thought it would have been better if we mentioned how the whole wheat muffin was healthier” (PG)</p> <p>“Encourage the kids more to try foods that they are not used to.” (PG)</p>

n= # of answer forms

Nutrition education challenges and areas of improvements were also discussed in key informant interviews and focus groups. A couple of participants stated that nutrition education in the *Food Lab* lacked direction; particularly, two participants identified food preparation activities as lacking and two participants stated that following a recipe was not nutrition education. To enhance FFP skills many participants suggested that FFPs should be included in the clean up.

Other improvements were to include activities that allowed for creativity and allowed FFPs to interact with others; focus on specific food and nutrition topics, such as nutritional content of foods; place more importance on the food and nutrition discussions; and develop lesson plan resources. A summary of the challenges and suggested areas of improvement are presented in Table 21.

Table 21

Challenges and Suggested Improvements with *Food Lab* Nutrition Education: Focus Group (FG) and Key Informant Interview (NC) Results

Challenges	Improvements	Quotes
<ul style="list-style-type: none"> • Nutrition education lacked direction <ul style="list-style-type: none"> ○ Interactive and creative exercises lacked direction ○ Cooking is not really nutrition education 	<ul style="list-style-type: none"> • Include FFPs in the clean up • More creative and interactive recipes • More food and nutrition discussion • Specific nutrition education topics <ul style="list-style-type: none"> ○ Focus on nutritional content • More resources 	<p>“The problem was...it lacked direction so some of the kids just fooled off and didn’t make sandwiches or didn’t contribute.” (FG)</p> <p>“CanU Nutrition is just the recipe and the Instructor would just tell us what to do, what to cut and cook.... and that’s it. I don’t think it’s Nutrition.” (FG)</p> <p>“We talked a lot last year about like Food Groups ...and I don’t remember doing that this year...[L]ast year throughout the year I’d be like, ‘ok, what Food Group’s are these?’...[T]hat knowledge base at the beginning I felt helped them solidify what they were eating and what they were making.” (FG)</p> <p>“I think that would probably help with kitchen hygiene and just teaching them manners to help their parents at home, cause you don’t know if these kids are actually getting told to help with the dishes.” (FG)</p>

Foods. Focus group and key informant interview data revealed that some foods posed problems; several participants stated that sometimes the foods were not desirable to FFPs. This was supported by one of the Program Questionnaire responses. To improve recipes participants suggested a balance between making foods nutritious and enjoyable, such as using foods that were more appealing and less healthy (Table 22).

Table 22

Challenges with and Suggested Improvements to *Food Lab* Foods: Focus Group (FG) and Key Informant Interview (NC & CC) Results

Challenges	Improvements	Quotes
Did not like some foods	Better balance between healthy and nutritious <ul style="list-style-type: none"> • Less healthy foods 	<p style="text-align: center;">“Some kids...didn’t like certain foods.” (CC)</p> <p style="text-align: center;">“No one just likes to eat vegetables for supper. I think sometimes there’s a little too much of just pure health food.” (FG)</p> <p style="text-align: center;">“A better balance can be made between food that’s enjoyable for the kids and healthy” (FG)</p>

Additional challenges and areas of improvement. Challenges and/or improvements with program exposure and space emerged in the key informant interview and focus group data. Participants implied that some FFP groups were not consistently exposed to the program. In particular, some groups had less exposure to the program in the fall of 2013 but had more intense exposure in the winter of 2014 compared to the consistent exposure that other FFP groups received. It was implied that the bonding between FFPs and volunteers in the groups with inconsistent exposure was limited. Therefore, more exposure was suggested. A specific suggestion was to increase exposure by including FFPs for a second year. Lastly, *Food Lab* space was considered limited, so suggestions were made to increase space to have more FFPs in a session or have fewer FFPs in a session; this was corroborated by one Program Questionnaire response. A summary of program exposure and space challenges and areas of improvement is presented in Table 23.

Table 23

Challenges and Suggested Improvements with *Food Lab* Program Exposure, and Space: Focus Group (FG) and Key Informant Interview (ND & NC) Results

Challenges	Improvements	Quotes
Program exposure: <ul style="list-style-type: none"> • Not see all FFPs every week 	Program exposure: <ul style="list-style-type: none"> • Increase exposure <ul style="list-style-type: none"> ○ More space ○ Come back for a second year 	“The second half after Christmas we had the same kids every single week Tuesday so I really got to know them more... They started talking more and telling me stories, like their cooking stories and... I didn’t realize that I would be able to connect with them as much.” (FG) “If they were coming back for second year and diving in deeper into what they are doing with nutrition, and cooking.” (ND)
Space: <ul style="list-style-type: none"> • Limited space 	Space: <ul style="list-style-type: none"> • More space • Fewer FFPs in a session 	“A cramped setting.” (NC) “With more space we could have more [FFPs] a night.” (ND) “I found that there were a lot of people... kids and Instructors and I think that it would be way more beneficial if there were less kids.” (NC)

Things that worked well/were positive in the *Food Lab*

Results from the formative evaluation also identified positive aspects of the *Food Lab*, which included aspects of the nutrition education lesson plans, and program implementation.

Nutrition education. Many positive aspects of the nutrition education component were identified in the Program Questionnaire responses (Table 24). At the beginning of the program this included the food and nutrition discussions while in the middle educational activities such as guest demonstrators worked well. Almost all of the responses at the end of the program period stated that food preparation exercises that were interactive and allowed for creative worked well. In the latter half of the program, encouraging FFPs to try new foods worked well.

Table 24

Positive Characteristics of Nutrition Education: Program Questionnaire (PQ)
Results from Three *Food Lab* Sessions

Program period	Results (%)	Positive characteristics	Quotes
Beginning (n=21)	23.8	Group discussions	“By asking questions about the children's favorite foods, least favorite foods, foods they eat at home, etc. I was able to keep the conversation around food without boring them...[G]etting them to guess what food groups were and describe a balanced meal was also effective” (PQ)
Middle (n=17)	29.4	Interactive and creative exercises Educational activities	“When presented with all of the different vegetables and condiments, they were more open to trying different types of vegetables and added more on.” (PQ)
End (n=15)	46.7	Encourage to try foods	“Most of the kids in my group liked the cooking class from [the] chef...paid attention during presentation and they agreed...[the food was] tasty.” (PQ) “Being enthusiastic about what we are making makes them more likely to try it.” (PQ)

n= # of answer forms

Positive aspects of nutrition education were also examined in key informant interviews and focus groups.

- *Interactive exercises that allowed FFPs to be creative with the foods they ate:* Interactive and creative exercises encouraged FFPs to try new foods because they had freedom to choose the foods they ate, and facilitated teamwork, bonding, and fun. They were also described as a good educational tool.
- *Flexibility in developing lesson plans resulted in flexible lessons:* Flexibility in program development allowed program needs and new ideas to be included, and freedom for Nutrition Instructors to implement lessons.

- *Group discussions*: Discussions facilitated food and nutrition education learning.

Program implementation. Positive aspects of program implementation were clearly identified in Program Questionnaire responses. At the beginning of the program many responses stated that it was beneficial when Nutrition Instructors were prepared to cook the foods. Also, having FFPs organized and having them engaged worked well. In the middle of the program, it was beneficial when Mentors provided assistance, which was followed by Nutrition Instructors working together. As well, ensuring all FFPs equally participated worked well. In the end of the program it was beneficial when Nutrition Instructors were prepared for a session, particularly prepared to cook the meals. Also, having more Nutrition Instructors at a table was described positively. To a lesser degree other positive aspects were also identified in Table 25.

Table 25

Positive Characteristics of Program Implementation: Program Questionnaire (PQ) Results from Three *Food Lab* Sessions

Program period	Results (%)	Positive characteristics	Quotes
Beginning (n=21)	52.4	Nutrition Instructors <ul style="list-style-type: none"> • Prepared/easy recipe to prepare • Working together • More at a table • More at a session/more floaters 	“It helped having two nutrition instructors at a table with the larger groups.” (PQ) “The hand washing activity was particular successful after the group Mentor volunteered to do it first and the kids follow after.” (PQ)
Middle (n=17)	58.8	Mentor assistance FFP engagement: <ul style="list-style-type: none"> • Organized • Well behaved • Engaged/equally engaging all FFPs 	“This year, preparing the food and equipment to use was much easier and faster with more nutrition instructor volunteers. Also, with more volunteers, it was easier to focus on the children and the lesson, instead of running around looking for things.” (PQ) “This year, the kids get their lab coats by their sizes and there are no numbers that the kids need to remember (like last year) and I like that.” (PQ)
End (n=15)	33.3	Assistance of the Nutrition Director	“The cooking session went well, every kid participated.” (PQ) “Allowing each child to have a turn measuring, stirring, cutting etc.” (PQ)

n= # of answer forms

Focus group and some key informant interview participants identified positive aspects of program implementation.

- Both Nutrition Coordinators at a session
- Volunteers supporting FFPs throughout the sessions and providing hands on learning
- Nutrition Instructors staying with one group of FFPs throughout the program
- Others included: more Nutrition Instructors in a session compared to the previous program year, more than one Nutrition Instructor at a table with

bigger FFP groups, decentralizing the nutrition education to individual Nutrition Instructors, Mentors assisting Nutrition Instructors facilitate sessions and an opportunity for individual FFPs to shine.

Table 26 details the main components of the nutrition education and program implementation that worked well.

Table 26

Positive Characteristics of *Food Lab* Nutrition Education and Program Implementation: Focus Group (FG) and Key Informant Interview (NC, ND & CC) Results

Positive characteristics	Quotes
<p>Nutrition education</p> <ul style="list-style-type: none"> • Interactive and creative exercises <ul style="list-style-type: none"> ○ Encouraged FFPs to try new foods ○ Facilitated teamwork, bonding, and fun ○ A good educational tool • Flexibility in development <ul style="list-style-type: none"> ○ Allow lessons to be modified ○ Incorporated new ideas ○ Gave Nutrition Instructors freedom • Group discussions 	<p>“Interactive lessons where the kids were actually getting to decide what went into their meal.” (NC)</p> <p>“They had a competition and they worked together as a team to make a sandwich with six ingredients...[T]hey were so excited to work together and they just loved brainstorming ideas.” (FG)</p> <p>“Exploring kids creativity that’s the best thing you could do to teach them.” (FG)</p> <p>“Getting even more creative and optimiz[ing] the experiences” (ND)</p> <p>“We sat around and then [the Nutrition Instructors] was like, ‘ok what Food Group was this? Why is this important? What does this help with?’ And actually got the kids talking. They sat down, they could concentrate and then that’s where the Nutrition aspects came into play” (FG)</p> <p>“By the second term it was more like, ‘hey, we really want to cook with food.’ Or ‘we really want...’” (NC)</p> <p>“[Lesson plans] were very loosely structured, they weren’t completely comprehensive we just had ideas and we encouraged the [Nutrition] Instructors to come up with the way that they wanted to get the information across.” (NC)</p>
<p>Program implementation</p> <ul style="list-style-type: none"> • FFP engagement <ul style="list-style-type: none"> ○ Supportive environment ○ Hands on teaching ○ Opportunity for FFPs to shine • Assistance of Mentors • Nutrition Instructors <ul style="list-style-type: none"> ○ More than one Nutrition Instructors at one table ○ Nutrition Instructors staying with one FFP group ○ More Nutrition Instructors in a session ○ Decentralized implementation • Having both Nutrition Coordinators at a session 	<p>“It was very easy to problem solve when there was two of us [Nutrition Coordinators].” (NC)</p> <p>“Last year we changed our groups every time but this year we kept the same four [FFPs] and I thought that was really good, cause they kind of get to know each other and feel comfortable with each other. And there was a few kids that tried lettuce, which is a big deal, cause they didn’t eat any green anything last year.” (FG)</p> <p>“Having us recognizing their skills I think definitely gives them more confidence and they want to show us what they can do in the kitchen...I think us recognizing that’s really important for them and you could tell that from their expressions on their face.” (FG)</p> <p>“I’d say it’s one of the most effective nutrition teaching tools for kids The hands on aspect that’s, that’s probably the biggest part.” (FG)</p>

Foods. Some Program Questionnaire responses at the beginning, middle and end stated that it worked well when-FFPs liked the foods (Table 27).

Table 27

Foods were Well Received: Program Questionnaire (PQ) Results from Three *Food Lab* Sessions

Program period	Results (%)	Topics	Quotes
Beginning (n=21)	4.8	Liked the foods served that day	“The kids have liked the recipe that is why they eat their food, even the picky eaters.” _(PQ)
Middle (n=17)	11.8		
End (n=15)	20.0		

n= # of answer forms

A summary of Food Lab challenges, areas for improvement and things that worked is found in Table 28.

Table 28

Summary of Results Identifying *Food Lab* Challenges, Suggested Improvements and Positive Characteristics

Program characteristics	Challenges	Suggested improvements	Things that worked well
Time	<ul style="list-style-type: none"> • Nutrition Instructors needed to do more meal preparation (ND, NC, FG) • Less time for 1st FFP group (ND, FG, PQ) • Quick recipes were selected when developing lessons (ND, NC, FG) • Limited nutrition education (ND, NC) <ul style="list-style-type: none"> ○ Prioritize or limit educational games/activities (ND, NC) ○ Nutrition discussions (NC, FG) <ul style="list-style-type: none"> ▪ Developed less structured discussions • Nutrition Instructors did not always have time to ask questions • Recipe took too long to cook (PQ) • Eating foods rushed (ND) • Session was rushed (PQ) 	<ul style="list-style-type: none"> • In general more time needed (NC, ND, FG) • More time for FFPs to engage in meal preparation (ND, NC) • More time for volunteers to prepare for the Food Lab (NC) • Prepare some of the recipe before FFPs arrive (PQ) 	N/A
Program implementation	<ul style="list-style-type: none"> • Engaging FFPs <ul style="list-style-type: none"> ○ Not engaged (PQ) ○ Allow some to dominate (FG, PQ) ○ Disorganized when enter labs (PQ) ○ Not getting along with each other (FG) ○ Not behaving (PQ) ○ Language barrier (PQ) • Mentor not assisting (NC, PQ) • Nutrition Instructors <ul style="list-style-type: none"> ○ Inconsistent program implementation across Instructors (FG) ○ Not sure what to do (PQ) ○ Short staffed (PQ) 	<ul style="list-style-type: none"> • Engaging FFPs <ul style="list-style-type: none"> ○ One on one time (PQ) ○ Assigns tasks (PQ) ○ Equal ingredients (PQ) ○ Better organization (PQ) ○ Give kids more control over recipes (FG, PQ) ○ Plan activities while waiting (PQ) ○ More floaters to help FFPs get along (FG) • Mentor assisting more (PQ) • Nutrition Instructors <ul style="list-style-type: none"> ○ Include in the development of lesson plans (NC) ○ Provide training (FG) ○ Better prepared (PQ) 	<ul style="list-style-type: none"> • FFP engagement: <ul style="list-style-type: none"> ○ Organized (PQ) ○ Well behaved (PQ) ○ Engaged/equally engaging all FFPs (PQ) ○ Supportive environment (FG) ○ Providing an opportunity for FFPs to shine (FG) ○ Hands on learning (ND, FG) • Mentor assistance (FG, PQ) • Nutrition Instructors <ul style="list-style-type: none"> ○ Working together (PQ) ○ Staying with one group of FFPs (NC, FG) ○ Being prepared/easy recipe to

		<ul style="list-style-type: none"> ○ Stay with same FFPs from the beginning to the end of the program (FG) ○ More floaters to prepare more food to eat (PG) 	<ul style="list-style-type: none"> prepare (PQ) ○ More at a table (FG, PQ) ○ More in a session/more floaters (PQ) ○ Decentralized nutrition education (ND) • Both Nutrition Coordinators at a session (NC, FG) • Assistance of the Nutrition Director (PQ)
Nutrition education	<ul style="list-style-type: none"> • Nutrition education lacked direction (PQ) <ul style="list-style-type: none"> ○ Interactive and creative exercises (FG) ○ Cooking is not really nutrition education (FG) 	<ul style="list-style-type: none"> • More food and nutrition discussions (FG, PQ) • Include FFPs in clean up (FG, PQ) • Specific nutrition education topics (FG) • Focusing on nutrition content of food (PQ) • Allow FFPs to have more meal preparation (PQ) • Encouraging FFPs to try new foods (PQ) • More recipes that allow FFPs to be creative and interactive (FG) • More resources (NC) 	<ul style="list-style-type: none"> • Group discussions (FG, PQ) • Interactive and creative exercises (NC, FG, PQ, CC) • Education activities (PQ) • Encourage to try foods (PQ) • Flexibility in developing lesson plans (NC)
Foods	<ul style="list-style-type: none"> • Did not like some foods (FG, CC, NC, PQ) 	<ul style="list-style-type: none"> • Better balance between healthy and nutritious (FG) <ul style="list-style-type: none"> ○ Less healthy foods, more appealing foods 	<ul style="list-style-type: none"> • Liked some foods (PQ)
Program exposure	<ul style="list-style-type: none"> • Did not see all FFPs every week (ND, FG) 	<ul style="list-style-type: none"> • Increase exposure (ND) <ul style="list-style-type: none"> ○ More space to have more FFPs and come back for a second year 	N/A
Space	<ul style="list-style-type: none"> • Limited space (NC) 	<ul style="list-style-type: none"> • Fewer FFPs in a session (NC) and more space (ND) 	N/A

***CanU Café* challenges/ suggested improvements**

Participants from key informant interviews and focus groups identified areas in the *CanU Café* that were challenging and/or needed improvement (Table 29).

Time. Evaluation participants indicated that time limitations restricted meal preparation, and short cuts were sometimes necessary. Also, time limitations impacted how healthy the foods were in both the *CanU Café* and the *Mobile CanU Café*. The interaction between the Café Assistants and FFPs was restricted due to time limitations. Participants suggested more time.

Food. Next, foods posed some difficulties. Several participants mentioned that even though bonding between the FFPs and volunteers/staff was an important component in the *CanU Cafe*, a better balance between focusing on nutrition and developing relationships could be made in the future. For example, recipes could be healthier and nutrition education could be included, by discussing the foods being eaten. Next, it was important to make recipes that the FFPs liked and were healthy but this was challenging especially with limited time. Suggestions for improvement included resource development, such as compiling recipes, to use in future sessions.

Others. Other challenges were also discussed. The *CanU Café* space was considered limited, and participants stated that more space would be beneficial in the future. It was challenging to transport the *Mobile CanU Café* food to a different building, foods spilled and the food carts were difficult to maneuver.

Things that worked well/ were positive in the *CanU Café*

Results suggested that several aspects of the *CanU Café* worked well. It was advantageous to have the assistance of the Nutrition Instructors for program

implementation, particularly meal preparation. Some participants suggested that the FFPs enjoyed some foods. Lastly, previous experience in *Fresh Fuel*, particularly in the *CanU Café*, was beneficial for the Café Assistants to have.

Table 29

CanU Café Challenges, Suggested Improvements and Positive Characteristics: Focus Group (FG) and Key Informant Interview (ND, CA & CC) Results

Program characteristics	Challenges	Improvements	That worked well	Quotes
Time	<ul style="list-style-type: none"> • Time restricted <ul style="list-style-type: none"> ◦ Meal preparation (CA, ND, FG) ◦ Sacrificed nutrition (CA, ND) ◦ Café Assistant and FFPs interaction (CA) 	<ul style="list-style-type: none"> • More time (CA) 	N/A	<p>“[The Café Assistants were] limited to just how healthy and obviously...[they] had to stick to some convenience.” (ND)</p> <p>“You kind of have to mass produce so much food in so much time.” (FG)</p> <p>“I spend most of the time preparing the food and I don’t really get time to interact with the kid’s very much.” (CA)</p> <p>“I had the same amount of time to prepare the meal [for the Mobile CanU Café as the CanU Café] but then I was serving so many more people so I felt like I had to take a lot of short cuts... You know buy a lot of things already made...already cut, already prepared that kind of thing. Whereas before it was easier to do more things homemade.” (CA)</p>
Foods	<ul style="list-style-type: none"> • That were liked (CA) • That were healthy (CA) 	<ul style="list-style-type: none"> • Resources (CA) • Focus on nutrition (FG) <ul style="list-style-type: none"> ◦ Healthier recipes ◦ Nutrition education 	<ul style="list-style-type: none"> • Foods that were liked (CA, ND) 	<p>“Trying to make something healthy, something quick, something that they were going to like...that was really, really hard.” (CA)</p> <p>“I just found that sometimes it wasn’t as nutritious as it could have been or introducing them to new foods” (FG)</p> <p>“Resource of recipes, that you could use in the future, that went really well.” (CA)</p> <p>“It’s fun that the kids are talking to us while eating but I think a bit more nutrition side would be better.” (FG)</p> <p>“We noticed that the kids always love going to CanU Café</p>

				cause they get the child friendly, healthy alternatives.” (ND)
Space	• Limited space (CA)	• More space (CA, CC)	N/A	“We’re growing so we have to find a way to keep up [and] our space is limited.” (CC)
Mobile CanU Cafe	• Transporting foods to the Mobile CanU Café (CA)	N/A	N/A	“More difficult to prepare something to transport there, to keep it warm and having the proper equipment to transport it too.” (CA)
Program implementation	N/A	N/A	<ul style="list-style-type: none"> • Program implementation (CA) <ul style="list-style-type: none"> ◦ Volunteer assistance ◦ Café Assistant Fresh Fuel experience 	<p>“I don’t think I could have done any of it without those volunteers, so that was awesome.” (CA)</p> <p>“[The other Café Assistant] really helped a lot...she taught me a lot of really great skills.” (CA)</p>

***Fresh Fuel*: General comments about the program**

Participants from focus groups and key informant interviews discussed *Fresh Fuel* by making comparisons, linking or talking about similar aspects of *Fresh Fuel*. *Fresh Fuel* challenges and improvements were identified.

Lack of clarity in program goals. Volunteers, practicum students and staff overwhelming suggested that there was lack of clarity in the purpose of *Fresh Fuel* due to different goals within the *Food Lab*, as well as between the *Food Lab* and the *CanU Cafe*. The goals of *Fresh Fuel* were identified as a) to feed FFPs and b) provide nutrition education; however, these goals were not seen as compatible by some participants, who implied that they were a source of tension in the *Food Lab*. Particularly, there was pressure to ensure that FFPs were not hungry after the *Food Labs*. Indirect communication between *CanU* staff about the need to ensure FFPs ate seemed to cause confusion in the *Food Labs*. Decisions made in the *Food Lab* (i.e. what foods/recipes to use) were not fully understood by the rest of *CanU* and feedback led to a revision of the foods used and limiting exposure to new foods. In addition, the responsibilities of the Nutrition Director were believed to focus on foodservice rather than on providing nutrition education. A participant stated that the *CanU Café* did not include a nutrition education component and simply following a recipe in the *Food Lab* was not equivalent to providing nutrition education. It was suggested that in the future there should be a separation of the nutrition and foodservice components.

Similarly, participants stated that there was a difference between the types of foods in the *CanU Café* and the *Food Lab* with respect to nutritional content. Participants made the distinction between the foods provided in the *CanU Café* as “comfort foods”,

and the foods in the *Food Lab* as “healthy foods.” Several participants noticed that the FFPs were also aware of the difference in the foods and complained about the difference. To improve *Fresh Fuel* a suggestion by some participants was to make the foods in the *CanU Café* and *Food Lab* similar and equally healthy, while another participant suggested that there should be a separation of the *Food Lab* and the *CanU Cafe*.

Connection between the CanU Café and the Food Lab. A connection between the *Food Lab* and the *CanU Café* was seen. One participant felt that for the first time there was interaction between the two *Fresh Fuel* components. This was viewed positively because for the first time volunteers were involved in both components.

Distribution/ packaging of leftover food. Several participants suggested that there should be a better method to take leftovers home from both the *Food Lab* and the *CanU Cafe* because plastic bags were not adequate. Encouraging FFPs to bring containers or having a set rule on how much leftovers one FFP can take home were some suggestions.

A summary of *Fresh Fuel* comments is found in Table 30.

Table 30.

Comments about *Fresh Fuel*: Focus Group (FG) and Key Informant Interview (ND, NC, CC & CA) Results

Comments	Quotes
<p>Competing program goals</p> <ul style="list-style-type: none"> • Important to feed the kids vs. provide nutrition education (NC, FG, CC) <ul style="list-style-type: none"> • CanU Café vs. Food Lab foods (NC, ND, FG) 	<p>“Teaching the kids about nutrition, about cooking is not the same as catering some of the other components.” (NC)</p> <p>“It was just a struggle between trying new things, making these recipes fun and exciting and then also making sure that the kids ate.” (NC)</p> <p>“[The Nutrition Director’s] position wasn’t really Nutrition Director it was more like Food Service Director. She was very much involved in getting the kids fed as opposed to assisting in the lab with nutrition related things.” (NC)</p> <p>“Our goal is get them to try it and the exposure [but] we need to make sure we can feed the picky kids too. We don’t want them being hungry.” (CC)</p> <p>“We started out saying we wanted to incorporate as many new foods as possible, that changed a little bit when we got a little bit of negative feedback about too many new foods all at once.” (NC)</p> <p>“I think what happened to Nutrition Café has become just a café where they just eat and leave and not actually learn nutrition while eating.” (FG)</p> <p>“The biggest difference in the two of them were the foods that were involved.” (ND)</p> <p>“One thing that really affected the Food Lab was that the CanU Café food was always comfort food like pizza and Kraft, or macaroni and cheese and stuff like that.” (FG)</p> <p>“It had a bad, bigger impact on us [in the Food Lab] than it did on the Café.” (NC)</p> <p>“It didn’t really matter what we were making [in the Food Lab] but they were seeing, ‘that’s what they are getting [in the CanU Café] and we’re not’...I think [that] made them feel like, ‘I don’t even want to help make anything [in the Food Lab]’” (FG)</p>
<p>Connection between Food Lab and CanU Cafe (ND)</p>	<p>“We had those [Food Lab] volunteers...getting a sense more of what’s going on in that CanU Café whereas before we didn’t.” (ND)</p>
<p>Program Improvement</p> <ul style="list-style-type: none"> • Better method to take food home (CA, FG) 	<p>“One thing I think they need to do is have a set rule about what food they can take home in plastic bags.” (FG)</p> <p>“A lot of the kids liked to take home the leftovers... What we were doing was we were...giving them little plastic bags to throw any leftovers in and maybe a better way that they could do that just so that they could take them home to their families.” (CA)</p>

Researcher reflections

Some notable reflections by the principle researcher about the innovative instruments used in this research evaluation are identified here. FFPs actively engaged and enjoyed participating in the Evaluation Stations. They intently listened to the instructions, interacted with the props, and asked questions. A high level of engagement by FFPs was desired by the evaluation team to ensure that the evaluation stayed within the theoretical basis of *CanU* (i.e. the Hope Theory) (Snyder, 2002), where motivating children, by building hope and self confidence is considered essential in influencing behavior change. Since the pre-program data collection was the first activity in *Fresh Fuel* that FFPs were exposed to, the evaluation team and steering committee believed it was important to ensure they had fun and were excited about the program beginning. Also, the high level of engagement indicated that the Evaluation Stations could be used effectively with this age group; however, content should undergo further validity and reliability testing. In line with this, FFPs seemed to have more food and nutrition knowledge than originally believed during the evaluation development stage because the principal researcher heard FFPs comment that the questions were easy.

Lastly, there appeared to be some mismatch between the pre-/post-program food and nutrition questions and the nutrition education taught during the program. The Evaluation Stations were developed with the input of the Nutrition Director (the key informant during evaluation development) but Nutrition Coordinators, who were directly responsible for program development, were not available as they started their practicum roles later on. Furthermore, evaluation results also revealed that lessons were not

structured, they changed to accommodate program needs/new ideas and not all Nutrition Instructors implemented the lessons similarly.

All other data collection tools were administered without challenges; however, time limitations, particularly for the Food Lab Questionnaire and Evaluation Stations, existed. Also, a modified version of the Food Lab Questionnaire could be made to more effectively describe Mentor experiences with FFPs, one that is more in tune with the dynamic nature of FFP groups in the *Food Labs*. While the principle researcher attempted to develop rapport prior to initiating the focus groups, participants were slightly reserved and the discussion took some time to develop. Separating Mentors and Nutrition Instructors might facilitate greater discussion, as Mentors might be more comfortable with each other and vice versa.

In summary, this evaluation research project was conducted mainly to determine program components that worked well or were challenging, as well as to explore suggestions for improvement by program volunteers, practicum students and staff. Mainly, time limitations, a mismatch in goals and foods in *Fresh Fuel*, and program implementation inconsistencies were noted. Interactive and creative exercises were seen as good tools to provide nutrition education. Summative results suggested that the program was relatively successful; there were some benefits to FFPs, which included social benefits, evidence of fun, and modest gains in food and nutrition outcomes; as well as benefits to both volunteers and practicum students.

CHAPTER 5—DISCUSSION

A pilot case study evaluation of *Fresh Fuel* was conducted using a Participatory Action Research framework (PAR). The research project was divided into two sections, a summative component and the primary formative component. In the summative evaluation, knowledge, skill, attitude and minor behavior changes in Fresh Fuel Participants (FFPs), and benefits to volunteers and practicum students were examined. The formative evaluation assessed challenges, suggested improvements to, and strengths in programming as identified by volunteer, practicum student and staff.

The evaluation methods piloted in this research project faced various restrictions, mainly logistical constraints and time limitations. Particularly, researchers were not involved with programming, which meant that the researchers had no control over program changes that occurred after the evaluation plan was developed at the Summer Institute; therefore, there seemed to be some mismatch between programming and pre/post-program measures. However, this allowed researchers to evaluate the program in its natural context and focus on the formative evaluation. Multiple instruments, which included questionnaires, innovative pre-/post-program Evaluation Stations, focus groups and/or key informant interviews, were triangulated to answer the research questions.

Results indicated that FFP knowledge, skill, attitudes and behavior related to food and nutrition improved to varying degrees. Also, there were social benefits for all FFPs, and FFPs experienced fun. Practicum students and volunteers primarily enhanced career paths through their experiences and indicated improvement in skills. Challenges pointed to program areas that could be enhanced. Primary challenges included program implementation, time limitations, nutrition education, foods, program exposure and space

for the *Food Lab*. For the *CanU Café* time and foods were challenging. Specifically, time to prepare for the *CanU Café* was restricted, and ensuring foods were liked by FFPs and were healthy was challenging. Lastly, results indicated that *Fresh Fuel* goals were incompatible with each other.

The following section involves a discussion of program processes, outcomes, and recommendations. Program outcomes will be discussed by connecting summative evaluation results to findings in literature and from Chapter 2. Program recommendations will be primarily based on the formative evaluation results and also supported by findings literature and from Chapter 2.

Program outcomes

Fresh Fuel Participant (FFP) outcomes

Food and nutrition outcomes. Food and nutrition knowledge gains by FFPs were moderate. Specific increases in food group knowledge were seen, while other areas, such as identifying healthy foods, naming foods and food safety demonstrated a small gain and still others, such as identifying sugar content of foods and kitchen safety, showed no gains. However, most FFPs did self-report that they learned about cooking. As with *Fresh Fuel*, many programs in the scoping review (Chapter 2) also aspired to improve participant knowledge about fruits and vegetables. Knowledge is often seen as an important precursor in behavior change (Farcia-Lascurain, Kicklighter, Jonnalagadda, Boudolf & Duchon, 2006); therefore, it is an important food and nutrition outcome for *Fresh Fuel* to target. Further exploration is needed to understand how *Fresh Fuel* can improve knowledge outcomes.

There was some evidence of attitude, skill and behavior changes in *Fresh Fuel* and at home related to food and nutrition. In particular, FFPs showed growing interest in cooking and several FFPs also informed volunteers that they wanted to cook recipes made at *Fresh Fuel* at home. Gains were made in food preparation skills in some FFPs and over one third reported making changes at home. Almost all FFPs tried new foods in *Fresh Fuel*.

Attitudes such as the intention to be healthier/cook healthier are sometimes viewed as a proxy for behavior change (Contento, Randell & Basch, 2002); therefore, evidence that attitudes were impacted by *Fresh Fuel* is encouraging. Literature also suggests that cooking, the primary activity in *Fresh Fuel*, can be used as a platform for exposure to, and tasting new foods, as well as enhancing preparation skills and confidence in cooking (Hersch, Perdue, Ambroz & Boucher, 2014). Similarly, other food and nutrition programs with the goal of exposing children to new foods have promising outcome gains, and the act of trying new foods is considered the first step in encouraging intake of those foods (Schindler & Forestell, 2013). Ultimately, Wadhera, Philips, Wilkie and Boggess (2015) found that repeated consumption of foods in childhood was an important predictor of liking those foods in adulthood.

FFP food and nutrition outcomes seem promising but it is important to take into consideration that long-term behavior change is difficult to achieve. Similar programs have found inconsistency in food and nutrition program behavioural outcomes (Safron et al., 2011; Thomas, 2006; Prelip et al., 2012; Caballero et al., 2003). Forneris et al. (2010) further stated that dietary behavior changes are more difficult to achieve because children often have less control over their foods than adults. Similarly, results from this evaluation

also implied that some parents had more control over FFP eating patterns or cooking habits at home. In addition, the dominant food environment in Canada encourages unhealthy eating patterns due to a proliferation of calorie-dense (high amounts of fat and sugar) fast and convenience foods, frequently targeted to children (Gantz, Schwartz, Angelini & Rideout, 2007; Monterio, Moubarac, Cannon, Ng & Popkin, 2013). However, it is still important for future evaluations to examine long-term food and nutrition outcomes, since evidence indicates that in adolescence eating patterns can deteriorate (Kelder, Perry, Klepp, Lytle, 1994).

Social benefits and program fun. Benefits related to social interaction and program fun were the most significant FFP program outcomes, which are outcomes that CanU as a whole targets. Notably, volunteers noticed that FFPs increasingly interacted with others and had fun (i.e. seemed to enjoy their time and were focused) as the program progressed. Since cooking was the central activity in the *Food Lab*, it can encourage the social interaction seen in this evaluation. Nelson, Corbin and Nickols-Richarson (2013) stated that cooking encourages children to work with others. On the other hand, and perhaps more importantly positive social interaction can affect outcomes related to food and nutrition. Particularly, peers have been found to impact eating patterns in children (Salvey, de la Haye, Bowker & Hermans, 2012) and school aged children cooking with peers can learn by observation and teamwork (Nelson et al., 2013). Additionally, Sotk et al. (2014) found evidence that adolescent peer encouragement to eat healthy had an influence on adolescent eating behavior. Long-term food and nutrition behavior change can be difficult to achieve; therefore, it might be beneficial for *Fresh Fuel* to examine

how social benefits and participant experiences play a role influencing food and nutrition outcomes in the future.

When child participants have fun and interact with others, it can be an indication of program engagement. The overarching *CanU* objective is to build potential in children for greater achievement in life, such as academic achievement, through positive experiences; therefore, engaging in the program and connecting with volunteers and other FFPs can be essential for instilling hope (i.e. Hope Theory) (Snyder, 2002) and achieving this objective. Academic success also feeds back into food and nutrition outcomes. For example, Snelling, Belson, Beard & Young (2015) connected lower school grades to higher consumption of unhealthy foods and Spiegel & Foulk (2006) stated that future studies should examine academic impact of programs because they found that participants improved academically after the food and nutrition program.

Volunteer/practicum student benefits

CanU strives to not only enhance FFP potential but also to positively impact the lives of their volunteers and practicum students, who were an essential resource to the program. Results revealed that volunteers and practicum students experienced many important benefits from their participation. Many participants identified developing career goals and gaining/ refining skills. The majority of Mentors in particular indicated career development while most Nutrition Instructors and both Nutrition Coordinators benefited in skill enhancement. Since Nutrition Instructors and Nutrition Coordinators actively applied knowledge gained from their Human Nutritional Sciences undergraduate program in the *Food Lab* it is reasonable that they would mention a skills benefit to a greater extent than Mentors. In comparison, Mentors interacted with the FFPs both in

Fresh Fuel and the rest of *CanU* programming to a greater extent, which could explain why a subset of those identifying a career development would indicate wanting to work with children in the future. Tangible benefits are important for young adult volunteers (Shields, 2009). According to the Kellogg Commission (1999), university students engaged in their community can significantly enhance their academic learning and their ability to work through difficulties in their own lives, as well as practice what they learn at university; therefore, it is important for students to be engaged in programs like *CanU*.

Program recommendations

The results from the formative evaluation highlighted areas that volunteers, practicum students and staff suggested improving, that were challenging and that were positive. The following are some main program recommendations for *Fresh Fuel* created to address main challenges, as well as to improve FFP program outcomes (Table 31).

Table 31

Main Program Recommendations

Recommendations
<p>1. Clarify overall goal of <i>Fresh Fuel</i> and ensure objectives of the <i>Food Lab</i> and <i>CanU Café</i> are consistent with the overall goal.</p> <ul style="list-style-type: none">a. The priority of the <i>Food Lab</i> should be food/nutrition education (e.g. exposure to new foods; skill development) rather than providing a meal.b. Strengthen the nutrition education in the <i>Food Lab</i><ul style="list-style-type: none">i. Consider focusing on certain foods and repeatedly exposing FFPs to those foods throughout the program (e.g. vegetables)ii. Clear program goals and objectives should inform lesson plans. Specifically, lesson plans should be more structured to provide direction for food/nutrition education. This will allow also give volunteers clear expectation in program implementation.c. Strengthen the <i>CanU Café</i><ul style="list-style-type: none">i. Enhance nutritional content of meals.ii. Consider incorporating a nutrition education component (e.g. discussion on the foods eaten). This could also reinforce messages in the <i>Food Lab</i>.
<p>2. Improve program implementation.</p> <ul style="list-style-type: none">a. Provide training to the Nutrition Instructors. Provide Mentors with information about their roles ahead of time.b. Enhance group cohesion between Nutrition Instructors, Mentors and FFP by ensuring that the same Nutrition Instructor stays with one group throughout the <i>Food Lab</i>.
<p>3. Increase program length & exposure for FFP.</p> <ul style="list-style-type: none">a. To minimize time limitations increase <i>Food Lab</i> session lengths, and preparation time for the <i>CanU Café</i>.b. Increase program exposure - consider increasing the number of <i>Food Lab</i> sessions and/or have FFPs come back for a second year.
<p>4. Include multicomponent program strategies (while this was not identified by students/volunteers in the evaluation, this approach is advocated in the literature).</p> <ul style="list-style-type: none">a. Include multicomponent nutrition education strategies by involving parents and using FFPs as peer leaders in their respective classrooms. By using the knowledge gained from <i>Fresh Fuel</i> in their classrooms as peer leaders, the school environment of FFPs will also be targeted as a place to reinforce messages. Both strategies could enhance outcome gains in FFPs.
<p>5. Future <i>Fresh Fuel</i> evaluation considerations.</p> <ul style="list-style-type: none">a. Examine outcomes for specific groups of FFPs could indicate how to target different FFPs.b. Examine the level of hope in FFPs.

Recommendation 1: Clarify overall goal of Fresh Fuel and ensure objectives of the Food Lab and CanU Café are consistent with the overall goal

The priority of the *Food Lab* should be nutrition education. The first and perhaps the most important program recommendation is to ensure that the *Food Lab* focuses on nutrition education rather than providing a meal. Several findings identified in this evaluation support this recommendation. Many participants (i.e. volunteers, practicum students and/or staff) stated that there were two incompatible goals in *Fresh Fuel*: a) the need to feed the FFPs, and b) the need to provide food and nutrition education. Moreover, it was important that foods were liked, even though it was challenging to do so. Concern about the likeability of foods appeared to have overpowered the nutrition education that was provided, which may ultimately limit food and nutrition outcomes. For instance, participants stated that exposure to new foods was limited because there was concern that FFPs might not eat unfamiliar foods.

Clearer program objectives would also assist in program development/implementation, and developing a more targeted evaluation in the future because “[f]or an evaluation to support decision making, it is critical to be able to distinguish theory failure (ideas that don’t work) from implementation failure (ideas that haven’t been appropriately tested)” (Patton, 2011, p. 194). In *Fresh Fuel*, the clash of these two apparent goals may have resulted in a failure to successfully implement either idea and in limited food and nutrition education gains by FFPs.

If the *Food Lab* focuses on nutrition education, there are several logistical implications that need to be considered. The *CanU Café* might need to provide a meal for all FFPs, regardless of exposure to the *Food Lab*. For instance, FFPs would partake in the *CanU Café* for a meal each time they come in for *CanU*, as well as the *Food Lab* for

nutrition education. However, this does not mean that FFPs would not consume food in the *Food Lab*. For instance, in the intervention examined by Schindler and Forestell (2013) children were provided foods to eat but to prevent pressuring children into consuming potentially disagreeable new foods, they had the option of spitting the foods out; therefore, the focus was not on eating a meal but rather exposing children to new foods and building positive attitudes towards these foods. To feed all the FFPs in the *CanU Café*, it would need to be expanded (i.e. more food, more staff/volunteers, more space, more time etc.) or another “feeding” set-up would need to be investigated as an alternative option.

Strengthen the nutrition education in the *Food Lab*. Literature about cooking and food exposure can help strengthen the food and nutrition component in the *Food Lab*. Schindler and Forestell (2013) included repeated exposure to vegetables to enhance liking and intake; therefore, cooking and exposure to foods could be strengthened by considering what foods to focus on, and how many instances those foods are given to the children.

Next, program goals and objectives should be used to inform all lesson plans. Lesson plans were described as being loosely structured to allow Nutrition Instructors the freedom to choose how to implement them; however, loosely structured lesson plans could have also led to the variability in Nutrition Instructor program implementation because Nutrition Instructors did not have clear instructions. In the scoping review the intervention examined by Prelip et al. (2011) did not result in behavior changes and this could have occurred because instructors had a lot of flexibility in implementing the program. More structured lessons could also address other evaluation results by providing

clear lesson plan direction, and including clear expectations about learning outcomes and group discussions.

Also, while many participants positively described exercises that were interactive and allowed for creativity, and wanted to include more of these activities, they were also described as lacking direction; therefore, clear lesson plans would augment the benefits of these activities. Also, one reason for observing modest gains in knowledge could be that FFPs were not sufficiently challenged in the *Food Labs*; therefore, more structured nutrition education lesson plans could clearly identify topics that are targeted. Structured lesson plans would also enable future evaluations to identify and examine specific program outcome gains more effectively.

Strengthen the CanU Café. The main goal in the *CanU Café* should be providing a nutritious meal to the FFPs. The *Food Lab* and *CanU Café* served different meals, whose attributes were observed by FFPs and instructors, resulting in complaints. Specifically, the *CanU Café* foods were perceived to be of lower nutritional content, than the *Food Lab*, which could have been influenced by the desire to have FFPs like the foods. It is important that in the future the meals are evaluated for nutritional content, in addition to palatability. The Cochrane review of obesity prevention programs also suggested that in the future there should be “improved nutritional quality of foods made available to students” (Waters et al, 2011, p.35). Providing foods of high nutritional content is important for food supplementation programs because they target children experiencing food insecurity (Nord & Parker, 2010).

While the main goal of the *CanU Café* should be food supplementation, a nutrition education component could also be included if key stakeholders desire it. As

participants suggested in this evaluation the *CanU Café* could be enriched by including discussions of the foods being eaten. Including a nutrition education component in the *CanU Café* could potentially reinforce the nutrition education provided in the *Food Lab*.

Recommendation 2: Improve implementation of the program

Provide training. In the *Food Lab*, Nutrition Instructors worked with groups of FFPs but were not provided a training section. As stated above, there was inconsistent implementation of the lesson plans by Nutrition Instructors. This could be also addressed by training the Nutrition Instructors, which was suggested by evaluation participants. This could help instructors understand the goals of the lesson plans, and enhance skills used to interact with youth and teach nutrition education. Ultimately, training Nutrition Instructors would lead to less variation across instructors in implementing the lesson plans. Similarly, one suggestion in the Cochrane review of obesity programs was to provide support to instructors (Waters, et al., 2011). A food and nutrition program examined in the scoping review also used university students as instructors (Freedman & Nickell, 2010) and another program utilized medical students but they were provided 15 hours of training (Muth, Chatterjee, Williams, Cross & Flower, 2008).

Also, the nutrition education program examined by Baranowski et al. (2000) found that their curriculum was not fully implemented as desired and suggested more intensive training. In addition, greater inclusion of Mentors in *Fresh Fuel* could be made by providing them with information about their roles, lesson plans and/or program outlines before the sessions start, as training Mentors might not be feasible since they may not be as knowledgeable in food and nutrition as Nutrition Instructors and there are more of them to train.

Increase group cohesion. To further enhance the nutrition education, better group cohesion between Nutrition Instructors, Mentors and FFPs in the *Food Lab* could be beneficial. Having one Nutrition Instructor stay with the same FFP group throughout the year was both a suggested improvement and described as a positive characteristic, which implies that this was not consistently occurring. In the scoping review most programs were school-based, so teachers were the instructors. There is a higher chance that teachers have rapport with the children and are more aware of the relationship dynamics in their classrooms. This could foster a safe environment for the children (Reverdy, Chesnel, Schlich, Koster & Lange, 2008). Greater group cohesion in the *Food Lab* could build rapport and address challenges in engaging FFPs. Ultimately, having Nutrition Instructors stay with the same FFP groups could foster a relationship between Nutrition Instructors and FFPs, leading to social benefits and greater food and nutrition outcomes.

Recommendation 3: Increase program length & exposure

This evaluation found that program time was limited and FFPs had variable exposure to *Fresh Fuel*. Specifically, time limitations were one of the most notable challenges throughout *Fresh Fuel*, in both the *Food Lab* and *CanU Café*. Equally important, FFP groups were differently exposed to *Fresh Fuel* (i.e. some groups participated in the *Food Lab* more during the first half of *Fresh Fuel* than other groups); therefore, the next suggestion is to increase the program length, and ensure FFPs are consistently exposed and/or have longer program exposure. For example, it might be beneficial to increase program exposure by including FFPs for a second year, as participants suggested. Also, as participants suggested, longer sessions could allow for

more depth in the food and nutrition education. In fact, longer program length has been associated with a more effective program (Bautista-Castano et al., 2004). Longer programs allow time for program participants to internalize knowledge, make attempts to implement changes and if need be to receive feedback from instructors (Stice & Shaw, 2004). Furthermore, Rooney and Murray, 1996 and Stice and Shaw (2004) also found stronger intervention effects in other health prevention programs with longer program lengths.

Recommendation 4: Include multicomponent program strategies to enhance FFP food and nutrition outcomes

Multiple food and nutrition education strategies could be included to enhance *Fresh Fuel* programming. While this was not a suggestion made in this evaluation, the scoping review concluded that multicomponent food and nutrition programs could be more promising in terms of reaching outcomes. In particular, other strategies could be utilized to target the same outcome from multiple angles.

For instance, the intervention examined by Day et al. (2008) targeted changes in fruit and vegetable knowledge, attitudes, perception and willingness to try foods, with the overall goal of increasing food and nutrition intake. Importantly, they implemented classroom nutrition education, whole school strategies and a family component. Furthermore, the classroom education was enhanced with fruit and vegetable taste testing. Also, the food and nutrition program examined by Forneris et al. (2010) produced some intervention effects, but they concluded that more multicomponent strategies might be needed to maintain those changes. One explanation why multicomponent programs are more effective is that children's food environments significantly influence diets (Engler-Stringer, Le, Gerrard & Muhajarine, 2014) because it can overpower learning gained

from a short-term program. Therefore, in literature there is increasing awareness for the need to include homes, schools and communities by programs (Ritchie, Crawford, Hoelscher, Sothorn, 2006).

A multicomponent dimension to the nutrition education in *Fresh Fuel* involving parents is a recommendation. Mainly, parental involvement may be key in improving *Fresh Fuel* outcomes. This may be particularly true for influencing behavior change, since this evaluation found that a FFP and volunteers stated that behavior change did not occur because parents were not supportive. Younger children may benefit more from parental involvement than older children, as suggested in the scoping review, but parental involvement may still have tremendous benefits for preadolescents.

Also, encouragement by *Fresh Fuel* volunteers was described to positively influence children to try foods, so to further reinforce this behavior, encouragement at home could also be beneficial. In fact, Wadhera et al. (2015) found that together repetition of foods in childhood and parental encouragement resulted in the greatest liking for those foods in adulthood than either alone. A review of food and nutrition programs concluded that parental involvement might be a key factor in obesity prevention (Hersch et al., 2014). Kemirembe (2011) recommended that programs should actively involve parents, so they can learn about their child's needs and help reinforce positive messages taught in the program. Lastly, the Cochrane review of obesity programs also emphasized a need to include parents in promoting healthy behaviors (Waters, et al., 2011).

The second recommended strategy is to utilize the partnership between Winnipeg schools and include peer education. Schools can be an important medium for health

education (Khambalia et al., 2011) and including the different environments of children in programming can enhance outcomes (Ritchie et al., 2006); therefore, *CanU* can expand their nutrition education into schools. Specifically, peer leaders could be utilized to expand *Fresh Fuel* into schools (Birnbaum et al., 2002). For example, during *Fresh Fuel* FFPs could be trained on how to teach classmates and in their respective classrooms they could be involved in nutrition education. As peer leaders, messages learned in *Fresh Fuel* will be reinforced (Birnbaum et al., 2002) and other children would also be exposed to some nutrition education. In summary, multiple food and nutrition strategies, through the inclusion of parents and/or schools, have the potential to enhance programming, and influence food and nutrition outcomes.

Recommendation 5: Future *Fresh Fuel* evaluation considerations

In future evaluations, different groups of FFPs could be examined in greater detail. This evaluation did not examine differences in outcomes between different groups of FFPs and there were many FFPs that were Newcomers, Aboriginal and from Visible Minorities. It might be important to examine if there are any difference in program outcomes gains for each group of participants, so programming could be improved to target each group more effectively. Also, this evaluation excluded FFP groups who were differentially exposed to *Fresh Fuel* (i.e. received reduced number of *Food Lab* experiences). In the future it may be important to include these groups to examine the exact “dose” of program exposure needed for significant changes to be seen.

Future evaluations should also examine the level of ‘hope’ in FFPs. This recommendation was made mainly as an outcome of the steering committee’s discussion of the findings. The Hope Theory (Synder, 2002) is used to guide *CanU*’s goals and

objectives; therefore, the level of hope can be an important indicator of program effectiveness. Additionally, to explore overall *CanU* effectiveness and make comparisons the level of hope can be measured in other *CanU* activities. To measure the level of hope, *Fresh Fuel* could use the adult hope scale developed and evaluated by Snyder et al. (1991) as a model.

Utilization-Focused Evaluation benefits

The Utilization-Focused Evaluation framework was ideal for the *Fresh Fuel* program. Reciprocal learning, between the researchers and key informants, occurred and enriched the evaluation. Researchers learned about *CanU* and *Fresh Fuel*; while, key informants learned about the evaluation process and how to think critically about program processes. For instance, a benefit from developing and implementing an evaluation is increased knowledge of process use, which is knowledge that programs gain by participating in an evaluation (Patton, 2011). The Utilization-Focused Evaluation framework, which has not been used with children's food and nutrition programs, led to an innovative evaluation of *Fresh Fuel*. Unique tools were developed to assess *Fresh Fuel* outcomes and impacts. In addition to targeting FFP outcomes, benefits to university students were assessed. Triangulation between different data sources and evaluation participants strengthened evaluation results.

Conversation between researchers and program staff after the evaluation suggested that staff had gained a new awareness of *Fresh Fuel* (i.e. things that worked well and things that didn't). The strongest example was that staff discussed the importance of needing a distinction between *CanU Café* and the *Food Lab*. Also, future *Fresh Fuel* practicum students would be *Fresh Fuel* volunteers that participated in this

evaluation; therefore, volunteer experiences in the evaluation could have contributed to improvements that were made to programming in the following year. Additionally, it is clear that there is an intention by the program to use the results. In fact, in the meeting to review the evaluation final report with key *CanU* stakeholders, the researchers were informed of changes that were already put in place to improve *Fresh Fuel*, some of which were identified in the results of this evaluation.

Knowledge translation

Knowledge translation is defined “as the methods for closing the gaps from knowledge to practice” (Straus, Tetroe & Graham, 2009, p.165) and it “goes beyond simple dissemination of knowledge into actual use of knowledge” (p.165). In a Utilization-Focused Evaluation dissemination is an important component of the evaluation process. The hope is that the findings will be used by the program and have long-term positive impacts on future Fresh Fuel participants, university students and staff (Patton, 2011). As with other components of a Utilization-Focused Evaluation, it is a collaborative process between evaluators and program stakeholders, and it is balanced by the costs and constraints placed on the program (Patton, 2011). The dissemination process can often involve multiple approaches such as multiple results presentations in contextualized formats tailored to the program to encourage use of evaluation findings (Patton, 2011).

Dissemination of this research evaluation involved discussing the results with/getting feedback on results from the steering committee, the development and delivery of a report, which was reviewed and approved by stakeholders, and an informal meeting with key stakeholders about the next steps for the program. The steering

committee decided that to maximize impact of findings, *CanU* would share results with future *Fresh Fuel* staff and students. Specifically, it is key that new practicum students are provided with the findings, as they are responsible for the *Food Lab*. Also, this will encourage future staff and practicum students to think critically of *Fresh Fuel*.

Evaluation findings generated a rich discussion on *Fresh Fuel* and *CanU*. The goals of *Fresh Fuel*, the role of *Fresh Fuel* within *CanU* and the need to reexamine the philosophy of *Fresh Fuel* were discussed. The steering committee discussed whether *Fresh Fuel* and other *CanU* activities generated the same level of hope as connections between *Fresh Fuel* and the Hope theory (Snyder, 2002) were made. This led to the reaffirmation that accomplishing small food related tasks and learning about food and nutrition were important. These skills could be used in every day lives and small successes in home environment have the potential to enhance the level of hope. However, the steering committee agreed that the philosophy of the program needs to be revisited in order to ensure goals and objectives were in line with each other to maximize hope building.

Evaluation findings encouraged *CanU* to enroll *Fresh Fuel* practicum students and volunteers in the 2015-2016 program period in a new two day food skills training program offered at the University of Manitoba. Lastly, evaluation findings will be shared with the larger community and policy decision makers through a summary of findings published by the Canadian Centre for Policy Alternatives.

Limitations

Several limitations of this research study need to be acknowledged. A non-experimental design was selected, as FFPs were not randomized and there was no control

group. Instruments were not thoroughly validated and were not measured for reliability. There was limited funding, which affected research design, and selection of data collection tools.

There may have been biases in responses. Most of the data was self-reported and in particular FFP pre-program and post-program data could have been influenced by a social desirability bias. About half of potential focus group participants signed-up for focus groups, despite multiple recruiting occasions, so there could have been a selection bias leading to the omission of additional information. Also, in focus groups some participants were more outspoken than others and the discussion was slow to develop. This could imply that not all participants expressed their opinions. However, the principle researcher did attempt to ensure all participants had the opportunity to voice their opinions.

Statistical tests were not conducted primarily due to logistical and time limitations. Particularly, the researchers did not develop the nutrition education lesson plans and the Nutrition Coordinators were not recruited when the evaluation was being developed. The Nutrition Director's knowledge about the previous program lesson plans was utilized to develop the pre/ and post-program instruments, as the 2013-2014 programming was expected to be very similar to the previous year. In addition to logistical limitations, there was uncertainty in the amount of time available to administer the pre-program tools because unexpected delays obtaining FFP application forms and there were concerns about potential delays in FFPs arriving at *Fresh Fuel*. This further reinforced the decision to forgo matching pre-program data to post-program data.

Additionally, the results indicated that in the previous year both Nutrition Coordinators and Nutrition Instructors helped develop the lesson plans but in the evaluation year Nutrition Coordinators took responsibility of developing lesson plans. They were developed weekly and changed to accommodate program needs, and the individual Nutrition Instructor had the freedom to decide how to implement the nutrition education, which the researchers did not expect to occur when developing the evaluation. As a result, there was some mismatch between data collection instruments and *Fresh Fuel* programming. This could have primarily affected FFP results on knowledge, and/or skills related to food and nutrition.

Initially the evaluation was developed to examine the *CanU Café* in greater detail; however, after the development of the evaluation some FFPs were assigned to have more exposure to the *CanU Café* than others. As a result, the *CanU Café* Questionnaire was eliminated from the evaluation. Despite this limitation, key informant interviews allowed for data to be collected on the *CanU Café*.

Lastly, knowledge gained by *Fresh Fuel* (Patton, 2011) from conducting a Utilization-Focused Evaluation could have been restricted, as there was a high turn over of staff after the evaluation was conducted; therefore, some of the knowledge gained by key informants from participating in this evaluation could have been lost. However, to limit the loss of knowledge by *Fresh Fuel* researchers maintained dialogue with remaining *CanU* stakeholders and findings will be shared with new staff and practicum students.

CHAPTER 6—CONCLUSION

Given the disturbingly high prevalence of obesity and poor diets experienced by Canadian youth, which can be compounded by food insecurity, evidence-based nutrition education and food literacy programs are sorely needed. *Fresh Fuel* is an example of one such program, which has invested in strong partnerships with organizations such as the University of Manitoba to assist with program implementation and evaluation. While an obesogenic environment described by Hills and Peters (1998), and the conditions that lead to food insecurity are difficult to counteract, rigorous evaluations of programs such as *Fresh Fuel* are highly recommended to improve the odds of combating unhealthy trends and empowering disadvantaged populations.

Fresh Fuel is a valuable program that offers a positive environment for experiences with food and nutrition to vulnerable children. Discussions, and activities that allow children an opportunity to interact with others, utilize their creativity and work with their hands were found to be important vehicles in nutrition education. Some short-term food and nutrition outcomes were clearly evident in terms of knowledge, skills, attitudes and behavior gains in Fresh Fuel Participants (FFPs). *Fresh Fuel* provides a positive environment, as evidenced by the social benefits gained and fun experienced by FFPs that could have contributed to the gains in food and nutrition outcomes. The scoping review (Chapter 2) revealed that food and nutrition program outcomes can be inconsistent; therefore, focusing on building experiences that encourage positive associations with food and nutrition could be the first step in setting the stage to encouraging behavior change in food and nutrition programs like *Fresh Fuel*.

Fresh Fuel also enriches academic and personal growth in University of Manitoba students. By engaging University of Manitoba students in different roles within *Fresh Fuel* and the greater *CanU* program, students obtained unique experiences and benefits; thus, identifying *CanU* as a program that adds to the community by building potential in the next generation of professionals.

As a program that is constantly growing, this Utilization-Focused Evaluation (Patton, 2011) provided a lens in which *Fresh Fuel* could examine program processes that need clarification, and for new ideas to be considered. Like other community-based programs *Fresh Fuel* changes to accommodate program needs and constraints (Estable, 2006). These changes could alter program processes and one of the main recommendations made from this Utilization-Focused Evaluation (Patton, 2011) was to reexamine program goals and objectives. In any program it is important that goals and objectives are aligned; therefore, this important evaluation outcome exemplifies the essential role of evaluations. Further, rigorous evaluations with different approaches are recommended for *Fresh Fuel* in the future.

The collaboration of the community end-users with researchers in developing research questions and methods was a positive Utilization-Focused Evaluation (Patton, 2011) experience. It led to the development of a more accurate and useful evaluation. The added benefits to *Fresh Fuel* by encouraging staff to examine *Fresh Fuel* critically and “integrat[e] evaluation into organizational culture” (Patton, 2011, p.144), support the conclusion that a Utilization-Focused Evaluation (Patton, 2011) is an appropriate evaluation framework for community-based food and nutrition programs to use.

REFERENCES

- Abood, D. A., Black, D. R., & Coster, D. C. (2008). Evaluation of a school-based teen obesity prevention minimal intervention. *Journal of Nutrition Education and Behavior, 40*(3), 168-174.
- Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology, 8*(1), 19-32, doi: 10.1080/1364557032000119616
- Atkins, L., & Michie S. (2013). Changing eating behavior: what can we learn from behavioral science? *Nutrition Bulletin, 38*(1). 30-35.
- Baker, A. D., Gilley, J., James, J., & Kimani, M. (2012). "High five to healthy living": A health intervention program for youth at an inner city community center. *Journal of Community Health, 37*(1), 1-9. doi: 10.1007/s10900-011-9387-1
- Baranowski, T., Baranowski, J., Cullen, K. W., deMoor, C., Rittenberry, L., Hebert, D. & Jones, L. (2002). 5 a day achievement badge for african-american boy scouts: Pilot outcome results. *Preventive Medicine, 34*(3), 353-363. doi: 10.1006/pmed.2001.0989
- Baranowski, T., Davis, M., Resnicow, K., Baranowski, J., Doyle, C., Lin, L. S., Smith, M., & Wang, D. T. (2000). Gimme 5 fruit, juice, and vegetables for fun and health: Outcome evaluation. *Health Education & Behavior: The Official Publication of the Society for Public Health Education, 27*(1), 96-111.
- Bautista-Castano, I., Doreste, J., & Serra-Majem, L. (2004). Effectiveness of interventions in the prevention of childhood obesity. *European Journal of Epidemiology, 19*, 617- 622.

- Bayne-Smith, M., Fardy, P. S., Azzollini, A., Magel, J., Schmitz, K. H., & Agin, D. (2004). Improvements in heart health behaviors and reduction in coronary artery disease risk factors in urban teenaged girls through a school-based intervention: The PATH program. *American Journal of Public Health, 94*(9), 1538-1543.
- Beaulieu, D., & Godin, G. (2012). Staying in school for lunch instead of eating in fast-food restaurants: Results of a quasi-experimental study among high-school students. *Public Health Nutrition, 15*(12), 2310-2319.
- Birnbaum, A. S., Lytle, L. A., Story, M., Perry, C. L., & Murray, D. M. (2002). Are differences in exposure to a multicomponent school-based intervention associated with varying dietary outcomes in adolescents? *Health Education and Behavior, 29*(4), 427-443.
- Black, M. M., Hager, E. R., Le, K., Anliker, J., Arteaga, S. S., Diclemente, C., Gittelsohn, J., Magder, L., Papas, M., Snitker, S., Treuth, M. S., & Wang, Y. (2010). Challenge! health promotion/obesity prevention mentorship model among urban, black adolescents. *Pediatrics, 126*(2), 280-288. doi: 10.1542/peds.2009-1832; 10.1542/peds.2009-1832
- Bogart, L. M., Elliott, M. N., Uyeda, K., Hawes-Dawson, J., Klein, D. J., & Schuster, M. (2011). Preliminary healthy eating outcomes of SNaX, a pilot community-based intervention for adolescents. *Journal of Adolescent Health, 48*(2), 196-202.
- Caballero, B., Clay, T., Davis, S. M., Ethelbah, B., Rock, B. H., Lohman, T., Norman, J., Story, M., Stone, E. J., Stephenson, L., & Stevens, J. (2003). Pathways: A school-based, randomized controlled trial for the prevention of obesity in American

- Indian schoolchildren. *The American Journal of Clinical Nutrition*, 78(5), 1030-1038.
- Cargo, M. & Mercer, S. L. (2008). The value and challenges of participatory research: Strengthening its practice. *Annual Review of Public Health*, 29(1), 325-50.
doi:10.1146/annurev.publhealth.29.091307.083824
- Cason, K. L., & Logan, B. N. (2006). Educational intervention improves 4th-grade school children's nutrition and physical activity knowledge and behaviors. *Topics in Clinical Nutrition*, 21(3), 234-240.
- Contento, I. R., Koch, P. A., Lee, H., & Calabrese-Barton, A. (2010). Adolescents demonstrate improvement in obesity risk behaviors after completion of choice, control & change, a curriculum addressing personal agency and autonomous motivation. *Journal of the American Dietetic Association*, 110(12), 1830-1839.
doi: 10.1016/j.jada.2010.09.015; 10.1016/j.jada.2010.09.015
- Contento, I. R., Randell, J. S. & Basch, C. E. (2002). Review and analysis of evaluation measures used in nutrition education intervention research. *Journal of Nutrition Education and Behavior*, 34(1), 2-25.
- Cornwall, A. & Jewkes, R. (1995). What is participatory research. *Social Science and Medicine*, 41(12), 1667-1676.
- Cotts, T. B., Goldberg, C. S., Palma Davis, L. M., DuRussel-Weston, J. E., Aaronson, S. M., Lin, K., & Eagle, K. A. (2008). A school-based health education program can improve cholesterol values for middle school students. *Pediatric Cardiology*, 29(5), 940-945.
- Covelli, M. M. (2008). Efficacy of a school-based cardiac health promotion intervention

program for African-American adolescents. *Applied Nursing Research*, 21(4), 173-180.

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. (3rd ed.). London, UK: Sage

Creswell, J. W., & Clark, V. L. P. (2009). *Designing and conducting mixed methods research*. (5th ed.). Los Angeles: Sage

Danyliw, A.D., Vatanparast, H., Nikpartow, N., & Whiting, S. J. (2011). Beverage intake patterns of Canadian children and adolescents. *Public Health Nutrition*, 14(11), 961-969.

Davis, J. N., Ventura, E. E., Cook, L. T., Gyllenhammer, L. E., & Gatto, N. M. (2011). LA sprouts: A gardening, nutrition, and cooking intervention for latino youth improves diet and reduces obesity. *Journal of the American Dietetic Association*, 111(8), 1224-1230. doi: 10.1016/j.jada.2011.05.009

Day, M. E., Strange, K. S., McKay, H. A., & Naylor, P. J. (2008). Action schools! BC – healthy eating: Effects of a whole-school model to modifying eating behaviours of elementary school children. *Canadian Journal of Public Health*, 99(4), 328-331

DeVault, N., Kennedy, T., Hermann, J., Mwavita, M., Rask, P., & Jaworsky, A. (2009). It's all about kids: Preventing overweight in elementary school children in Tulsa, OK. *Journal of the American Dietetic Association*, 109(4), 680-687. doi: 10.1016/j.jada.2008.12.021

Dietitians of Canada. (2005). *Individuals and Household Food Insecurity in Canada:*

Position of Dietitians of Canada. Retrieved from
<http://www.dietitians.ca/Downloadable-Content/Public/householdfoodsec-position-paper.aspx>

Dinour, L. M., Bergen, D., & Yeh, M-C. (2007). The food insecurity-obesity paradox: a review of the literature and the role food stamps may play. *Journal of the American Dietetic Association*, 107(11), 1952-1961. Retrieved from
<http://www.sciencedirect.com.proxy1.lib.umanitoba.ca/science/article/pii/S0002822307016161#>

Elliot, B., Jayatilaka, D., Brown, C., Varley, L., & Corbett, K. K. (2012). “We are not being heard”: Aboriginal perspectives on traditional foods access and food security. 1-9. doi: 10.1155/2012/130945.

Engler-Stringer, R., Le, H., Gerrard, A., & Muhajarine, N. (2014). The community and consumer food environment and children’s diet: A systematic review. *BioMed Central Public Health*, 14 (1), 522-537.

Estable, A. (2006). Challenges of participatory evaluation within a community-based health promotion partnership: Mujer Sana, Comunidad Sana- healthy women, healthy communities. *The Canadian Journal of Program Evalaution*, 21(2). 25-57.

Fahlman, M. M., Dake, J. A., McCaughtry, N., & Martin, J. (2008). A pilot study to examine the effects of a nutrition intervention on nutrition knowledge, behaviors, and efficacy expectations in middle school children. *The Journal of School Health*, 78(4), 216-222. doi: 10.1111/j.1746-1561.2008.00289.x; 10.1111/j.1746-1561.2008.00289.x

- Farcia-Lascurain, M. C., Kicklighter, J. R., Jonnalagadda, S. S., Boudolf, E. A., & Duchon, D. (2006). Effect of a nutrition education program on nutrition-related study. *Journal of Immigrant and minority health*, 8(1), 57-65.
- Forneris, T., Fries, E., Meyer, A., Buzzard, M., Uguy, S., Ramakrishnan, R., Lewis, C., & Danish, S. (2010). Results of a rural school-based peer-led intervention for youth: Goals for health. *Journal of School Health*, 80(2), 57-65.
- Foster, G. D., Sherman, S., Borradaile, K. E., Grundy, K. M., Vander Veur, S. S., Nachmani, J., Karpyn, A., Kumanyika, S., & Shults, J. (2008). A policy-based school intervention to prevent overweight and obesity. *Pediatrics*, 121(4), e794-e802.
- Fredricks, J. A., & Simpkins, S. D. (2005). Promoting positive youth development through organized after-school activities: Taking a closer look at participation of ethnic minority youth. *Child Development Perspectives*, 6(3). 280-287.
- Freedman, M. R., & Nickell, A. (2010). Impact of after-school nutrition workshops in a public library setting. *Journal of Nutrition Education and Behavior*, 42(3), 192-196. doi: 10.1016/j.jneb.2009.07.003; 10.1016/j.jneb.2009.07.003
- Frenn, M., Malin, S., & Bansal, N. K. (2003). Stage-based interventions for low-fat diet with middle school students. *Journal of Pediatric Nursing*, 18(1), 36-45.
- Gantz, W., Schwartz, Angelini, J. R., & Rideout, V. (2007) Food for thought: Television food advertising to children in the United States. *The Henry J. Kaiser Family Foundation*. Retrieved from <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/7618.pdf>.
- Garcia-Lascurain, M. C., Kicklighter, J. R., Jonnalagadda, S. S., Boudolf, E. A., &

- Duchon, D. (2006). Effect of a nutrition education program on nutrition-related knowledge of english-as-second-language elementary school students: A pilot study. *Journal of Immigrant and Minority Health, 8*(1), 57-65. doi: 10.1007/s10903-006-6342-9.
- George, M. A., Daniel, M. & Green, L. W. (2007). Appraising and funding participatory research in health promotion, *International Quarterly of Community Health Education. 26*(2), 171-187.
- Gilman, R., Meyes, J., & Perez, L. (2004). Structured extracurricular activities among adolescents: Findings and implications for school psychologists. *Psychology in the Schools, 41*(1), 31-41. doi: 10.1002/pits/10136
- Golan, M., & Crow, S. (2004). Parents are key players in the prevention and treatment of weight-related problems. *Nutrition Grand Rounds, 62*(1). 39-50. doi: 10.1111/j.1753-4887.2004.tb00005.x
- Harrell, T. K., Davy, B. M., Stewart, J. L., & King, D. S. (2005). Effectiveness of a school-based intervention to increase health knowledge of cardiovascular disease risk factors among rural Mississippi middle school children. *Southern Medical Journal, 98*(12), 1173-1180.
- He, M., Beynon, C., Sangster Bouck, M., St Onge, R., Stewart, S., Khoshaba, L., Horbul, B. A., & Chircoski, B. (2009). Impact evaluation of the northern fruit and vegetable pilot programme - a cluster-randomised controlled trial. *Public Health Nutrition, 12*(11), 2199-2208. doi: 10.1017/S1368980009005801.
- Hoelscher, D. M., Springer, A. E., Ranjit, N., Perry, C. L., Evans, A. E., Stigler, M., &

- Kelder, S. H. (2010). Reductions in child obesity among disadvantaged school children with community involvement: The Travis county CATCH trial. *Obesity*, *18*(SUPPL. 1), S36-S44.
- Hollar, D., Messiah, S. E., Lopez-Mitnik, G., Hollar, T. L., Almon, M., & Agatston, A. S. (2010). Healthier options for public schoolchildren program improves weight and blood pressure in 6- to 13-year-olds. *Journal of the American Dietetic Association*, *110*(2), 261-267. doi: 10.1016/j.jada.2009.10.029; 10.1016/j.jada.2009.10.029
- Health Canada. (2004). Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)- Income –Related household Food Security in Canada. Retrieved from http://www.hc-sc.gc.ca/fn-an/alt_formats/hpfb-dgpsa/pdf/surveill/income_food_sec-sec_alim-eng.pdf
- Health Canada. (2006). *Obesity*. Retrieved from http://www.hcsc.gc.ca/hlvs/alt_formats/pacrb-dgapcr/pdf/iyh-vsv/life-vie/obes-eng.pdf
- Health Canada. (2012). Do Canadian adolescents meet their nutrient requirements through food intake alone? Retrieved from: http://www.hc-sc.gc.ca/fn-an/alt_formats/pdf/surveill/nutrition/commun/art-nutr-adol-eng.pdf
- Health Canada. (n.d.). Community Health Survey, 2007-2008. Retrieved from <http://www.hc-sc.gc.ca/fnan/surveill/nutrition/commun/insecurit/key-stats-cles-2007-2008-eng.php#fnb1>
- Hersch, D., Perdue, L., Ambroz, T., & Boucher, J. L. (2014). The impact of

- cooking classes on food-related preferences, attitudes, and behaviors of school-ages children: A systematic review of the evidence, 2003-2014. *Preventing Chronic Disease*, 11(11), 1-10.
- Hills, J. O., & Peters, J. C. (1998). Environmental contributions to the obesity epidemic. *Science*, 280(5368). 1371–1374. doi: 10.1126/science.280.5368.1371
- IBM Corp. Released 2013. IBM SPSS Statistics for Macintosh, Version 22.0. Armonk, NY: IBM Corp. Microsoft. (2011). Microsoft Excel [computer software]. Redmond, Washington: Microsoft.
- Jenkins, S. & Horner, S. D. (2005). Barriers that influence eating behaviors in Adolescents. *Journal of Pediatric Nursing*, 20(4). 258-267. doi: 10.1016/j.pedn.2005.02.014.
- Kant, A., & Graubard, B., I. (2013). Family income and education were related with 30-year time trends in dietary and meal behaviors of American children and adolescents. *Journal of Nutrition*, 143(5). 690-700.
- Kemirembe, O. M. K. (2011). An evaluation of nutrition education program for low-income youth. *Journal of extention*, 49(3), 1-7.
- Kirkpatrick, S. I., & Tarasuk, V. (2007). Food insecurity is associated with nutrient inadequacies among Canadian adults and adolescents. *Journal of Nutrition*, 138(3), 604-612.
- Kumanyika, S., Jeffery, R. W., Morabia, C., Ritenbaugh, C., & Antipatis, V. J. (2002). Obesity prevention: The case for action. *International Journal of Obesity*, 26I(2). 425-36.
- Kelder, S. H., Perry, C. L., Klepp, K- I., & Lytle, L. L. (1994). Longitudinal

- tracking of adolescent smoking, physical activity, and food choice behaviors. *American Journal of Public Health*, 84(7), 1121-1126.
- Kellogg Commission of the Future of State and Land-Grant Universities. (1999). *Returning to our roots: The engaged institution* (3rd report). Washington, DC: National Association of State Universities and Land-Grant Colleges.
- Khambalia, A. Z., Dickinson, S., Hardy, L. L., Gill T., & Baur, (2011). A synthesis of existing systematic reviews and meta-analyses of school-based behavioural interventions for controlling and preventing obesity. *Obesity Reviews*, 13(3). 214-233.
- Lakkakula, A., Geaghan, J., Zanovec, M., Pierce, S., & Tuuri, G. (2010). Repeated taste exposure increases liking for vegetables by low-income elementary school children. *Appetite*, 55(2), 226-231. doi: 10.1016/j.appet.2010.06.003
- Lansigan, R.K., Emond, J. A., & Gilbert-Diamond, D. (2015). Understanding eating in the absence of hunger among young children: a systematic review of existing studies. *Appetite*, 85(1), 36-47. doi: 10.1016/j.appet.2014.10.032.
- Lei, S., O'Loughlin, J., Tremblay, A., & Gary-Donald, K. (2014). The association between food patterns and adiposity among Canadian children at risk of overweight. *Applied Physiology, Nutrition, and Metabolism*, 39(2), 195-201.
- Lillico, H. G., Hammond, D., Manske, S., & Murnaghan, D. (2014). The prevalence of eating behaviors among Canadian youth using cross-sectional school-based surveys. *Biomedical Central Public Health*, 14, 323-335.
- Lytle, L. A., Murray, D. M., Perry, C. L., Story, M., Birnbaum, A. S., Kubik, M. Y., &

- Varnell, S. (2004). School-based approaches to affect adolescents' diets: Results from the TEENS study. *Health Education and Behavior, 31*(2), 270-287.
- Manitoba Youth Health Survey Report 2012-2013. (2014). *Partners in Planning for Health Living*. Retrieved from <http://partners.healthincommon.ca/tools-and-resources/youth-health-survey/>
- McCaughy, N., Fahlman, M., Martin, J. J., & Shen, B. (2011). Influences of constructivist-oriented nutrition education on urban middle school students' nutrition knowledge, self-efficacy, and behaviors. *American Journal of Health Education, 42*(5), 276-285.
- McCormick, A., Kattelmann, K., Ren, C., Richards, A., & Wells, K. (2009). "Fun fruit and veggie event" enhances acceptance of fruits and vegetables in school-aged children. *Topics in Clinical Nutrition, 24*(3), 252-261. doi: 10.1097/TIN.0b013e3181b543fa
- McGaffey, A., Hughes, K., Fidler, S. K., D'Amico, F. J., & Stalter, M. N. (2010). Can elvis pretzley and the fitwits improve knowledge of obesity, nutrition, exercise, and portions in fifth graders? *International Journal of Obesity (2005), 34*(7), 1134-1142. doi: 10.1038/ijo.2010.58; 10.1038/ijo.2010.58
- Melnyk, B. M., Jacobson, D., Kelly, S., O'Haver, J., Small, L., & Mays, M. Z. (2009). Improving the mental health, healthy lifestyle choices, and physical health of hispanic adolescents: A randomized controlled pilot study. *The Journal of School Health, 79*(12), 575-584. doi: 10.1111/j.1746-1561.2009.00451.x; 10.1111/j.1746-1561.2009.00451.x
- Michie, S., & Johnston, M. (2012). Theories and techniques of behavior change:

- developing a cumulative science of behavior change. *Health Psychology Review*, 6(1), 1-6.
- Monterio, C. A., Moubarac, J.-C., Cannon, G., Ng, S. W., & Popkin, B. (2013). Ultra-processed products are becoming dominant in the global food system. *Obesity Reviews*, 14(S2), 21-28.
- Muth, N. D., Chatterjee, A., Williams, D., Cross, A., & Flower, K. (2008). Making an IMPACT: Effect of a school-based pilot intervention. *North Carolina Medical Journal*, 69(6), 432-440.
- National Advisory Committee on SARS and Public Health. (2003). *Learning from SARS: Renewal of public health in Canada*. Ottawa, ON: Health Canada. Retrieved from <http://www.phac-aspc.gc.ca/publicat/sars-sras/pdf/sars-e.pdf>
- Nelson, S. A., Corbin, M. A., & Nickols-Richarson, S. M. (2013). A call for culinary skills education in childhood obesity-prevention interventions: Current status and peer influences. *Journal of Academy of Nutrition and Dietetics*, 113(8), 1031-1036.
- Nord, M., & Parker, L. (2010). How adequately are food needs of children in low-income households being met? *Children and Youth Services Review*, 32(9), 1175-1185.
- Patton, M. Q. (2011). *Essentials of utilization-focused evaluation*. Saint Paul, Minnesota: Sage Publications.
- Powell, L. M., & Nguyen, B. T. (2013). Fast-food and full-service restaurant consumption among children and adolescents: effect on energy, beverage, and nutrition intake. *Journal of American Medical Association Pediatrics*, 167(1), 14-20. doi: 10.1001/jamapediatrics.2013.417.

- Power, E. M. (2005). Determinants of healthy eating among low-income Canadians. *Canadian Journal of Public Health, 96*(3), S37-S42.
- Prelip, M., Kinsler, J., Thai, C. L., Erausquin, J. T., & Slusser, W. (2012). Evaluation of a school-based multicomponent nutrition education program to improve young children's fruit and vegetable consumption. *Journal of Nutrition Education and Behavior, 44*(4), 310-318.
- Prelip, M., Slusser, W., Thai, C. L., Kinsler, J., & Erausquin, J. T. (2011). Effects of a school-based nutrition program diffused throughout a large urban community on attitudes, beliefs, and behaviors related to fruit and vegetable consumption. *Journal of School Health, 81*(9), 520-529.
- Province of British Columbia. Ministry of Health. (2005). A Framework for Core Functions in Public Health. *Population Health and Wellness*. Retrieved from http://www.health.gov.bc.ca/library/publications/year/2005/core_functions.pdf
- Public Health Agency of Canada. (2013). *Risk Factor Atlas*. Retrieved from: <http://www.phac-aspc.gc.ca/cd-mc/atlas/index-eng.php>
- Public Health Agency of Canada (2011). *Obesity in Canada- Snapshot*. Retrieved from www.phac-aspc.gc.ca/hp-ps/hl-mvs/oic-oac/assets/pdf/oic-oac-eng.pdf
- Rabe, M., Ohri-Vachaspati, P., & Scheer, S. D. (2006). The influence of the youth expanded food and nutrition education program on nutrition knowledge and self-reported behaviors of elementary school children. *Journal of Extension, 44*(3), 187-204.
- Rainville, B., & Brink, S. (2001). Food insecurity in Canada, 1998-1999. *Applied*

Research Branch of Strategic Policy, Ottawa, ON: Human Resources
Development Canada

- Reverdy, C., Chesnel, F., Schlich, P., Koster, E. P., & Lange, C. (2008). Effect of sensory education on willingness to taste novel food in children. *Appetite*, 51, 156–165.
- Reynolds, K. D., Franklin, F. A., Binkley, D., Raczynski, J. M., Harrington, K. F., Kirk, K. A., & Person, S. (2000). Increasing the fruit and vegetable consumption of fourth-graders: Results from the high 5 project. *Preventive Medicine*, 30(4), 309-319. doi: 10.1006/pmed.1999.0630
- Ritchie, L. D., Crawford, P. B., Hoelscher, D. M., & Sothorn, M. S. (2006). Position of the American Dietetic Association: Individual-, family-, school-, and community-based interventions for pediatric overweight. *Journal of American Dietetic Association*, 106(6), 925-945.
- Roberts, K. C., Shields, M., de Groh, M., Aziz, A., & Gilbert, J.-A. (2012). Overweight and obesity in children and adolescents: Results from the 2009 to 2011 Canadian health measures survey. *Health Reports*, 23(3). Statistics Canada Catalogue no. 82-003-X.
- Rooney, B. L., & Murray, D. M. (1996). A meta-analysis of smoking prevention programs after adjustment for errors in the unit of analysis. *Health Education Quarterly*, 23, 48–64.
- Rosenbaum, M., Nonas, C., Weil, R., Horlick, M., Fennoy, I., Vargas, I., Kringasa, P., & The ElCamino Diabetes Prevention Group. (2007). School-based intervention acutely improves insulin sensitivity and decreases inflammatory markers and

- body fatness in junior high school students. *The Journal of Clinical Endocrinology and Metabolism*, 92(2), 504-508. doi: 10.1210/jc.2006-1516
- Rosenkranz, R. R., Behrens, T. K., & Dzewaltowski, D. A. (2010). A group-randomized controlled trial for health promotion in girl scouts: Healthier troops in a SNAP (scouting nutrition & activity program). *BMC Public Health*, 10, 81-2458-10-81. doi: 10.1186/1471-2458-10-81; 10.1186/1471-2458-10-81
- Safron, M., Aleksandra, C., Gaspar, T., & Luszczynska, A. (2011). Obesity-related behaviors and body weight change: A systematic umbrella review. *Behavioral Medicine*, 37(1). 15-25.
- Salvey, S., de la Haye, K., Bowker, J. C., & Hermans, R. C. J. (2012). Influence of peers and friends on children's and adolescents' eating and activity behaviors. *Physiology & Behavior*, 106(3), 369-378.
- Schindler, J. M., & Forestell, C. A. (2013). Assessing the effect of food exposure on children's identification and acceptance of fruit and vegetables. *Eating Behaviors*, 14(1), 53-56.
- Seal, N., & Seal, J. (2011). Developing healthy childhood behaviour: Outcomes of a summer camp experience. *International Journal of Nursing Practice*, 17(4), 428-434. doi: 10.1111/j.1440-172X.2011.01924.x
- Sean, M., Lambert, M., O'Loughlin, J., & Gray-Donald, K. (2012). Household income, food insecurity and nutrition in Canadian Youth. *Canadian Journal of Public Health*, 103(2), 94-99.
- Shields, P. O. (2009). Young adult volunteers: Recruitment appeals and other marketing

- considerations. *Journal of Non profit & Public Sector Marketing*, 21(2), 139-159.
doi: 10.1080/10495140802528658
- Simpkins, S. D., Delgado, M. Y., Price, C. D., Quach, A., & Starbuck, E. (2013). Socioeconomic status, ethnicity, culture, and immigration: Examining the potential mechanisms underlying Mexican-origin adolescents' organized activity participation. *Developmental Psychology*, 49(4). 706-721.
- Snelling, A., Belson, S. I., Beard, J., & Young, K. (2015). Associations between grades and physical activity and food choices. *Health Education*, 115(2), 141-151.
- Snyder, C., R. (2002). Hope theory: Rainbows in the mind, psychological inquiry. *An International Journal for the Advancement of Psychological Theory*, 13(4). 249-275. Retrieved from http://dx.doi.org/10.1207/S15327965PLI1304_01
- Snyder, C. R., Harris, C., Anderson, J. R., Hollerin, S. A., Irving, L. M., Sigmon, S. T., ... Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60(4), 570-585.
- Sotk, F., M., de Vet, E., de Wit, J., Luszczynska, A., Safron, M., & de Ridder, D. T. (2014). The proof is in the eating: subjective peer norms are associated with adolescents' eating behavior. *Public Health Nutrition*, 18(6), 1044-1051.
- Spiegel, S. A., & Foulk, D. (2006). Reducing overweight through a multidisciplinary school-based intervention. *Obesity (Silver Spring, Md.)*, 14(1), 88-96. doi: 10.1038/oby.2006.11
- Statistics Canada in 2011. Fruit and vegetable consumption. (2011). Retrieved from <http://www.statcan.gc.ca/pub/82-625-x/2012001/article/11661-eng.htm>

- Stice, E., & Shaw, H. (2004). Eating disorder prevention programs: a meta-analytic review. *Psychological Bulletin*, *130*(2), 206-227.
- Stice, E., Shaw, H., & Marti, C. N. (2006). A meta-analytic review of obesity prevention programs for children and adolescents: The skinny on interventions that work. *Psychological Bulletin*, *132*(5), 667 – 691.
- St-Onge, M-P, Keller, K. L., & Heymsfield, S. B. (2003). Changes in childhood food consumption patterns: a cause for concern in light of increasing body weights. *The American Journal of Clinical Nutrition*, *78*, 1068-1073.
- Stock, S., Miranda, C., Evans, S., Plessis, S., Ridley, J., Yeh, S., & Chanoine, J.P. (2007). Healthy buddies: A novel, peer-led health promotion program for the prevention of obesity and eating disorders in children in elementary school. *Pediatrics*, *120*(4), e1059-e1068
- Straus, S. E., Tetroe, J., & Graham, I. (2009). Defining knowledge translation. *Canadian Medical Association Journal*, *181*(3-4), p. 165- 168. doi: 10.1503/cmaj.081229
- Tarasuk, V., Mitchell, A., & Dachner, N. (2013). Research to identify policy options to reduce food insecurity (PROOF). *Household food insecurity in Canada 2011*. Retrieved from <http://nutritionalsciences.lamp.utoronto.ca/>
- Tek, N. A., Yildiran, H., Akbulut, G., Bilici, S., Koksall, E., Karadag, M. G., & Sanlier, N. (2011). Evaluation of dietary quality of adolescents using Healthy Eating Index. *Nutrition research and practice*, *5*(4), 322-328.
- Thomas, H. (2006). Obesity prevention programs for children and youth: Why are their results so modest? *Health Education Research*, *21*(6), 783-795.
- Tremblay, M. S., Shields, M., Laviolette, M., Craig, C.L., Janssen, I., & Grober, S.C.

- (2010). Fitness of Canadian children and youth: Results from the 2007-2009 Canadian Health Measures Survey. *Health Reports*, 21(1). 1-14
- Trevino, R. P., Yin, Z., Hernandez, A., Hale, D. E., Garcia, O. A., & Mobley, C. (2004). Impact of the bienestar school-based diabetes mellitus prevention program on fasting capillary glucose levels: A randomized controlled trial. *Archives of Pediatrics & Adolescent Medicine*, 158(9), 911-917. doi: 10.1001/archpedi.158.9.911
- Tuuri, G., Zanovec, M., Silverman, L., Geaghan, J., Solmon, M., Holston, D., Guarino, A., Roy, H., & Murphy, E. (2009). "Smart bodies" school wellness program increased children's knowledge of healthy nutrition practices and self-efficacy to consume fruit and vegetables. *Appetite*, 52(2), 445-451. doi: 10.1016/j.appet.2008.12.007; 10.1016/j.appet.2008.12.007
- Veugelers, P. J., & Fitzgerald, A. L. (2005). Prevalence of and risk factors for childhood overweight and obesity. *Canadian Medical Association Journal*. 173 (6). 607-613.
- Wadhera, D., Philips, E. D. C., Wilkie, L. M. & Boggess, M. M. (2015). Perceived recollection of frequent exposure to foods in childhood is associated with adulthood liking. *Appetite*, 89, 22-32.
- Wall, D. E., Least, C., Gromis, J., & Lohse, B. (2012). Nutrition education intervention improves vegetable-related attitude, self-efficacy, preference, and knowledge of fourth-grade students. *Journal of School Health*, 82(1), 37-43.
- Wang, M. C., Rauzon, S., Studer, N., Martin, A. C., Craig, L., Merlo, C., Fung, K.,

- Kursunoglu D., Shannguan, M., & Crawford, P. (2010). Exposure to a comprehensive school intervention increases vegetable consumption. *Journal of Adolescent Health, 47*(1), 74-82.
- Waters E, de Silva-Sanigorski A, Burford, B. J., Brown, T., Campell, K. J., Gao, Y., Armstrong, R., Prosser, L., & Summerbell, C. D. (2011). Interventions for preventing obesity in children. *Cochrane Database of Systematic Reviews, 12*: CD001871. doi 10.1002/14651858.CD001871.pub3.
- Watson, L. C., Kwon, J., Nichols, D., & Rew, M. (2009). Evaluation of the nutrition knowledge, attitudes, and food consumption behaviors of high school students before and after completion of a nutrition course. *Family and Consumer Sciences Research Journal, 37*(4), 523-534. doi: 10.1177/1077727X08329002
- Wilson, D. B., Jones, R. M., McClish, D., Westerberg, A. L., & Danish, S. (2012). Fruit and vegetable intake among rural youth following a school-based randomized controlled trial. *Preventive Medicine, 54*(2), 150-156.
- Wilson, D. K., Friend, R., Teasley, N., Green, S., Reaves, I. L., & Sica, D. A. (2002). Motivational versus social cognitive interventions for promoting fruit and vegetable intake and physical activity in African American adolescents. *Annals of Behavioral Medicine : A Publication of the Society of Behavioral Medicine, 24*(4), 310-319.
- Wood, M. J., & Brink, P. J. (1998). *Advanced Design in Nursing Research*. (2nd ed.) Thousand Oaks: SAGE Publications, Inc.
- Yin, R. K. (2014). *Case study research: Design and Methods* (5th ed.). Los Angeles, CA: Sage.

Yu, B. N. (2010). Weight status and determinants of health in Manitoba children and youth. *Canadian Journal of Dietetic Practice and Research*, 71(3), 115-121.

APPENDICES

APPENDIX A

Consent forms



UNIVERSITY
OF MANITOBA

Faculty of Human Ecology
Human Nutritional Sciences

310 Human Ecology Bldg.
University of Manitoba
Winnipeg, MB, R3T 2N2
Phone: (204) 474-7322
Fax: (204) 474-7592
Email : slater@cc.umanitoba.ca

Participant Parent/Guardian Informed Consent Letter

Fresh Fuel: Food Club Evaluation

For more information about this study, please contact
JOYCE SLATER, Ph.D.
Faculty of Human Ecology, University of Manitoba
Email: slater@cc.umanitoba.ca Tel: (204) 474-7322

Dear participating CanU parents/caregivers:

In order to make the Fresh Fuel: The CanU Food Club the best possible experience for participants, staff and volunteers, we will be doing a program evaluation this year. All students participating in the Fresh Fuel: The CanU Food Club during the 2013-2014 school year are invited to take part in the evaluation study, which is being conducted as part of a Master's research study. As a student in CanU, or a caregiver of a child in CanU, you are receiving this letter to tell you more about the study and to invite you to take part.

The purpose of the evaluation study is to see if the Fresh Fuel: The CanU Food Club is helping participants, and how the Fresh Fuel: The CanU Food Club can be improved. Dr. Joyce Slater, an assistant professor in the Faculty of Human Ecology at the University of Manitoba, and her Master's student, Mihiri Witharana, are conducting the study.

For your child to participate in the evaluation study, you must give permission or "consent". This consent form, a copy of which will be left with you for your records, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what participation is involved. Please take the time to read this carefully and be sure you understand the information. If you would like more, you should feel free to ask.

STUDY PURPOSE:

The purpose of the study is to see if the *Fresh Fuel: The CanU Food Club* activities are helping participants, and how the *Fresh Fuel: The CanU Food Club* can be improved.

PROCEDURES FOR THE STUDY:

In the *Fresh Fuel: The CanU Food Club Evaluation* students will be completing activities, and answering questions to determine what they are learning, and what kind of experiences they are having at the *Fresh Fuel: The CanU Food Club*. The information gathered from these activities are the data we will use to evaluate the program. **YOU ARE BEING ASKED FOR PERMISSION TO ALLOW US TO USE THE INFORMATION, OR DATA, THAT IS**

COLLECTED. Specifically, these activities will include:

- A set of activities the children will perform. This will be done to determine their knowledge of basic food, nutrition and kitchen safety. These will be done at the beginning and at the end of the 14-week program. Also, the children will answer several questions about what they hope to learn at Fresh Fuel: The CanU Food Club (at the beginning of the program). At the end of the program they will be asked what they learned at CanU, and what they liked the most/least about the program. Also, at the end of the program there will be questions asking about any changes in food and nutrition attitudes and behaviors outside of the program. Your child will answer all written questions anonymously, and no information provided will be linked to a particular child.
- Program staff and volunteers will be asked questions about their learning and experiences with the children (e.g. are the children appearing to have fun and be engaged in the program activities? What went well and what could be improved?). Program staff and volunteers will answer a questionnaire about their experiences three times during the program, and will meet with researchers at the end of the program to discuss their experience with Fresh Fuel: The CanU Food Club. All information provided by program staff and volunteers will be anonymous, and will not identify any particular child.

BENEFITS OF TAKING PART IN THE STUDY:

There are no benefits for taking part in the study except for the ways we might be able to make the work better because of what we learn from the study. There may also be some benefits to others: your participation will help us better understand how to create an after-school food and nutrition program that is fun and interesting for next year's CANU students as well as for students in other after-school food and nutrition programs.

RISKS OF TAKING PART IN THE STUDY:

The risks of participating in the study are minimal. There may also be questions that they may not feel comfortable answering or they may not understand the question. We will always check with students to be sure they want to participate and remind them that they have the option to not answer a question or ask that their information not be included in the study. We will also make sure they understand what is being asked.

CONFIDENTIALITY

Your child will not be identified by name or in any other way as part of this evaluation study. We will do everything we can to keep personal information about your child confidential. We will not use names or other personal information (e.g., your school, age) in anything we say or write about the study. Digital information will be coded and kept in password-protected files and back-up drive kept in a locked safe, or in an encrypted partition on a computer (Truecrypt). All hard copies of data will also be coded and kept in a locked filing cabinet in a locked office. Only Dr. Slater and her student, Ms. Witharana, will have access to the information.

Confidential information gathered for the study will be kept for five years and then destroyed.

PAYMENT

No payment will be provided for taking part in this study.

VOLUNTARY NATURE OF STUDY

Taking part in this study is voluntary. That means you may choose that your child not take part. It also means that if you decide to allow your child to take part now, you may change your mind at any time. There are no negative consequences for you or your child if you decide you no longer wish for them to participate in the study. They can continue to participate in CanU.

RESULTS

We hope to share what we learn in the study by talking about it (presentations) and writing about it (publications and reports). We researchers, and others who plan after-school food and nutrition programs may be interested in what we find out. We also hope to use what we learn to do other studies like this one, so we may share the results with agencies who provide grants for this kind of research. We also plan to share our findings with you and others who participate in the study by sending out an invitation to read our report on the CanU website.

CONSENT (parent/caregiver)

Your signature on the CanU consent form in the “The Fresh Fuel: The CanU Food Club Evaluation Research Study” section indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to allow your child to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw your child from the study at any time, and /or they may refrain from answering any questions they prefer to omit, without prejudice or consequence. Your child’s continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

ASSENT (child)

Your child is also asked to provide their signature on the CanU consent form, indicating they also agree to participate in the research study. If they do not provide assent, they will not be included as part of the study; however if they assent and you do not provide consent, they will also not be included.

The University of Manitoba Research Ethics Board(s) and a representative(s) of the University of Manitoba Research Quality Management / Assurance office may also require access to your research records for safety and quality assurance purposes.

This research has been approved by the Joint Faculty Research Ethics Board of the University of Manitoba. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at 474-7122. A copy of this consent form has been given to you to keep for your records and reference.

If you have any further questions about this study, please contact Dr. Joyce Slater in the Faculty of Human Ecology at the University of Manitoba by email: slater@cc.umanitoba.ca or phone: (204) 474-7322.



AUTHORIZATION AND MEDICAL CONSENT FORM

Information received is confidential and is being gathered for the purposes of serving your child while in the care of the CANU program. Any medical information collected here serves to authorize CANU, and its leadership and volunteers, to obtain medical assistance in emergencies.

For the school year 2011/2012

Please include a picture of your child/youth along with this form.

In the case of custody agreements, please include the proper form authorizing parental contacts.

Student Name _____ Date of Birth _____

Address _____

Parents'/Guardians' Names _____

Home Phone Number (204) _____ Work or Cell Phone Number

(204) _____

Provincial Health Card Number (6 digit) _____ (9 digit) _____

Family Doctor _____ Phone Number (204) _____

Allergies _____

Does your child have any physical, emotional, mental, behavioural

Yes No

concerns or limitations that our staff should be aware of?

If yes, please explain:

Is your child bringing any medication with him/her?

Yes No

If yes, please list.

The safety of your child is our primary concern. Precautions will be taken for their well-being and protection.

Parent/Guardian Signature _____

Printed Name _____ Date _____

I/we, the parents or guardians named above, authorize the CANU Director or CANU's volunteer leaders to sign a consent for medical treatment and to authorize any physician or hospital to provide medical assessment, treatment or procedures for the participant named above.

I/we, named above, undertake and agree to indemnify and hold blameless the Director, Staff, and the CANU leadership from and against any loss, damage or injury suffered by the participant as a result of being part of the activities of CANU, as well as of any medical treatment authorized by the supervising individuals representing the organization.

Photography

Please sign below to grant permission for the reasonable use of pictures containing your child in any or all of the following ways:

Brochures/Promotional material

Displays/crafts

Website

Newsletters

Parent/Guardian Signature _____

Printed Name _____ Date _____

CANU Program Child Activities

I have read, understood and agree with the above and sign it to cover all CANU program activities for the program year. These activities carry risk of injury and include but are not exclusive of transportation to and from the program and related field trips; physical activity; and participation in food preparation, cooking and cleaning.

Parent/Guardian Signature _____

Printed Name _____ Date _____

Effective from date signed through _____

The Literacy Club: Research Study Informed Consent

Your signature indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to allow your child to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw your child from the study at any time, and /or he/she may refrain from answering any questions, without prejudice or consequence. Your child's continued participation should be as informed as the initial consent, so you should feel free to ask for clarification or new information throughout your child's participation.

The University of Manitoba Research Ethics Board(s) and a representative(s) of the University of Manitoba Research Quality Management / Assurance office may also require access to research records for safety and quality assurance purposes. This research has been approved by the Education/Nursing Research Ethics Board of the University of Manitoba. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at 474-7122. A copy of this consent form has been given to you to keep for your records and reference. If you have any further questions about this study, please contact Dr. Michelle Honeyford in the Faculty of Education at the University of Manitoba by email: michelle_honeyford@umanitoba.ca or phone: (204) 474-7243.

Participant's Signature (CANU Student) _____ Date _____

Parent or Guardian's Signature _____ Date _____

Researcher and/or Delegate's Signature _____ Date _____

“Fresh Fuel: The CanU Food Club”: Research Study Informed Consent

Your signature below indicates that you understood the information provided in the “Participant Parent/Guardian Informed Consent Letter” and agree to the participation of your child as a subject in this research study. Your signature does not mean that you are waiving your legal rights nor does it mean that the researchers, sponsors, or involved institutions are released from their legal and professional responsibilities. Your child’s participation is voluntary and at any point in this study you are free to withdraw you child, and your child may refrain from answering any questions, without consequences or prejudice. You are encouraged to ask any questions you have or clarifications at any point during the study, so that your consent informed throughout the study.

The Joint-Faculty Research Board of Ethical Review at the University of Manitoba has approved this research study. If you have any concerns or complaints about this project, you may contact the above-named persons or the Human Ethics Secretariat at 474-7122 or email Margaret.bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Participant’s Signature (CANU Student) _____
Date _____

Parent or Guardian’s Signature _____
Date _____

Researcher and/or Delegate’s Signature _____
Date _____

FOR A COPY OF THE STUDY RESULTS, PLEASE COMPLETE THE FOLLOWING:

I would like to receive the results by (check one of the following):

- E-mail Regular Post

E-mail address

Street Address

Purposes and Extent

CANU is collecting and retaining this personal information for the purpose of enrolling your child in our programs, to assign the student to the appropriate classes, to develop and nurture ongoing relationships with you and your child, and to inform you of program updates and upcoming opportunities in our programs. This information will be maintained indefinitely as it is a requirement of our insurance company and legal counsel. If you wish CANU to limit the information collected, or to view your child’s information, please contact us at: (info@can-u.ca).



UNIVERSITY
OF MANITOBA

Faculty of Human Ecology
Human Nutritional Sciences

310 Human Ecology Bldg.
University of Manitoba
Winnipeg, MB, R3T 2N2
Phone: (204) 474-7322
Fax: (204) 474-7592
Email : slater@cc.umanitoba.ca

CAFÉ ASSISTANT CONSENT FORM
Fresh Fuel: The CanU Food Club Evaluation

For more information about this study, please contact
JOYCE SLATER, Ph.D.
Faculty of Human Ecology, University of Manitoba
Email: slater@cc.umanitoba.ca Tel: (204) 474-7322

Research Project Title: Impact of pre-adolescent nutrition education: An innovative evaluation of the CanU Food Club

This consent form, a copy of which will be left with you, is only part of the process of informed consent. It should give you the basic idea of what the evaluation is about and what your participation will involve. Please take the time to read this consent form carefully and understand any accompanying information provided.

The purpose of this interview will be to explore your experiences in the CanU Cafe. This will contribute to the larger Fresh Fuel: The CanU Food Club evaluation, which will also explore the program impacts on participants and ways to improve the Food Club.

This study requests your participation in the following

A. *Key Informant Interview:*

You will be interviewed with the other Café Assistant. The interviews will be no longer than 1 hour and the time will be used to explore your opinions about the CanU Cafe, your experience as the Café Assistant, and your suggestions for program improvement. The session will be digitally recorded. You will be provided with beverages and snacks.

The information obtained in this research will be used to dialogue with the CanU board and funders, and the public; it will also be used to inform future research. If you would like to receive a summary of the results from the interview, complete the section at the end of this consent form.

No names will be associated with the information you give. However, as one of only two Café Assistants anonymity may be reduced in the event that quotations and/or

paraphrases are used in the evaluation findings and you are identifiable by your job title. You will have a chance to review any identifying information before the researchers use it. Data related to personal information and results obtained including audiotapes will be kept in a locked cabinet in a locked room and destroyed after 5 years. Additionally, a summary of results will be provided to CanU for their program development purposes.

Your signature on this form shows that you understand the information regarding participation in the research project and agree to serve as a participant. This does not waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so feel free to ask for clarification or new information throughout your participation. Dr. Joyce Slater is conducting this research study in the Department of Human Nutritional Sciences at the University of Manitoba (474-7322 or slater@cc.umanitoba.ca).

The Joint-Faculty Research Board of Ethical Review at the University of Manitoba has approved this research study. If you have any concerns or complaints about this project, you may contact the above-named persons or the Human Ethics Secretariat at 474-7122 or email Margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Name (Please Print)

Participant's Signature

Date

Researcher and/or Delegate's Signature

Date

FOR A COPY OF THE STUDY RESULTS, PLEASE COMPLETE THE FOLLOWING:

I would like to receive the results by (check one of the following):

E-mail

Regular Post

E-mail Address

Street Address



UNIVERSITY
OF MANITOBA

Faculty of Human Ecology
Human Nutritional Sciences

310 Human Ecology Bldg.
University of Manitoba
Winnipeg, MB, R3T 2N2
Phone: (204) 474-7322
Fax: (204) 474-7592
Email : slater@cc.umanitoba.ca

NUTRITION DIRECTOR CONSENT FORM
Fresh Fuel: Food Club Evaluation

For more information about this study, please contact
JOYCE SLATER, Ph.D.
Faculty of Human Ecology, University of Manitoba
Email: slater@cc.umanitoba.ca Tel: (204) 474-7322

Research Project Title: Impact of pre-adolescent nutrition education: An innovative evaluation of the CanU Food Club

This consent form, a copy of which will be left with you, is only part of the process of informed consent. It should give you the basic idea of what the evaluation is about and what your participation will involve. Please take the time to read this consent form carefully and understand any accompanying information provided.

The purpose of this interview will be to explore your experiences in the food lab. This will contribute to the larger “Fresh Fuel: The CanU Food Club”, which will also explore the program impacts on participants and ways to improve the Food Club.

This study requests your participation in the following:

A. *Key Informant Interview:*

Each key informant will be interviewed individually. The interviews will be no longer than 1 hour and the time will be used to explore your opinions about the Food Club, your experience as the Food Club Coordinator, and your suggestions for program improvement. The session will be digitally recorded. You will be provided with beverages and snacks.

The information obtained in this research will be used to dialogue with the CanU board and funders, and the public; it will also be used to inform future research. If you would like to receive a summary of the results from the interview, complete the section at the end of this consent form.

No names will be associated with the information you give. However, as the only Nutrition Director anonymity may be reduced in the event that quotations and/or paraphrases are used in the evaluation findings and you are identifiable by your job title.

You will have a chance to review any identifying information before the researchers use it. Data related to personal information and results obtained including audiotapes will be kept in a locked cabinet in a locked room and destroyed after 5 years. Additionally, a summary of results will be provided to CanU for their program development purposes.

Your signature on this form shows that you understand the information regarding participation in the research project and agree to serve as a participant. This does not waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so feel free to ask for clarification or new information throughout your participation. Dr. Joyce Slater is conducting this research study in the Department of Human Nutritional Sciences at the University of Manitoba (474-7322 or slater@cc.umanitoba.ca).

The Joint-Faculty Research Board of Ethical Review at the University of Manitoba has approved this research study. If you have any concerns or complaints about this project, you may contact the above-named persons or the Human Ethics Secretariat at 474-7122 or email Margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Name (Please Print)

Participant's Signature

Date

Researcher and/or Delegate's Signature

Date

FOR A COPY OF THE STUDY RESULTS, PLEASE COMPLETE THE FOLLOWING:

I would like to receive the results by (check one of the following):

E-mail

Regular Post

E-mail Address

Street Address



UNIVERSITY
OF MANITOBA

Faculty of Human Ecology
Human Nutritional Sciences

310 Human Ecology Bldg.
University of Manitoba
Winnipeg, MB, R3T 2N2
Phone: (204) 474-7322
Fax: (204) 474-7592
Email : slater@cc.umanitoba.ca

MENTOR CONSENT FORM

Fresh Fuel: The CanU Food Club-Evaluation

For more information about this study, please contact
JOYCE SLATER, Ph.D.
Faculty of Human Ecology, University of Manitoba
Email: slater@cc.umanitoba.ca Tel: (204) 474-7322

Research Project Title: Impact of pre-adolescent nutrition education: An innovative evaluation of the Fresh Fuel: The CanU Food Club

Researcher: Joyce Slater, RD, PhD and Mihiri Witharana (Master's student)

This consent form, a copy of which will be left with you, is only part of the process of informed consent. It should give you the basic idea of what the study is about and what your participation will involve. Please take the time to read this consent form carefully and understand any accompanying information provided.

The purpose of the research will be to explore your experiences and perceptions in the food lab. This will contribute to the larger Fresh Fuel: The CanU Food Club evaluation, which will also explore the program impacts on participants and ways to improve the Food Club.

This study requests your participation in the following:

A) *Answering Questionnaires*

- i) Food Lab Questionnaire: During three Fresh Fuel: The CanU Food Club sessions you will be asked to complete a short questionnaire about your experiences in the food lab.
- ii) Narrative Questionnaire: After the CanU program session is complete you will be asked to complete a short questionnaire about your experience and reflections of Fresh Fuel: The CanU Food Club.

B) *Focus Group*

After the CanU program sessions are complete you will be asked to participate in a focus group. You will have the option of attending one of four focus groups, the one that is more convenient for you. The focus groups will also include Nutrition Coordinators and Nutrition Instructors. It is expected that there will be no more

than 10 participants in each group and will not take longer than 1 hour. This time will be spent to explore your experiences as a volunteer, interaction with participants and ways to improve the Fresh Fuel: The CanU Food Club. The session will be digitally recorded and you will be provided with beverages and snacks. Please ensure that you do not mention any discussion from the focus group after the group is completed, as all comments and discussions are strictly confidential.

No names will be associated with the information you give, and the results will be reported for the group. Some quotes may be used, but these will be anonymous. Data related to personal information and results obtained including audiotapes will be kept in a locked cabinet in a locked room and destroyed after five years. Additionally, a summary of evaluation results will be provided to CanU for their program development purposes.

Your signature on this form shows that you understand the information regarding participation in the evaluation and agree to serve as a participant. This does not waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so feel free to ask for clarification or new information throughout your participation. Dr. Joyce Slater, from the Department of Human Nutritional Sciences at the University of Manitoba, is conducting this research study (474-7322 or slater@cc.umanitoba.ca).

The Joint-Faculty Research Board of Ethical Review at the University of Manitoba has approved this research study. If you have any concerns or complaints about this project, you may contact the above-named persons or the Human Ethics Secretariat at 474-7122 or email Margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Name (Please Print)

Participant's Signature Date

Researcher and/or Delegate's Signature Date

FOR A COPY OF THE STUDY RESULTS, PLEASE COMPLETE THE FOLLOWING:

I would like to receive the results by (check one of the following):

E-mail

Regular Post

E-mail Address

Street Address

NUTRITION INSTRUCTOR CONSENT FORM

Fresh Fuel: The CanU Food Club-Evaluation

For more information about this study, please contact
JOYCE SLATER, Ph.D.
Faculty of Human Ecology, University of Manitoba
Email: slater@cc.umanitoba.ca Tel: (204) 474-7322

Research Project Title: Impact of pre-adolescent nutrition education: An innovative evaluation of the Fresh Fuel: The CanU Food Club

Researcher: Joyce Slater, RD, PhD and Mihiri Witharana (Master's student)

This consent form, a copy of which will be left with you, is only part of the process of informed consent. It should give you the basic idea of what the study is about and what your participation will involve. Please take the time to read this consent form carefully and understand any accompanying information provided.

The purpose of the research will be to explore your experiences and perceptions in the food lab. This will contribute to the larger Fresh Fuel: The CanU Food Club evaluation, which will also explore the program impacts on participants and ways to improve the Food Club.

This study requests your participation in the following:

A) *Answering Questionnaires*

- i) Program Questionnaire: During three Fresh Fuel: The CanU Food Club sessions you will be asked to complete a short questionnaire about your experiences in the food lab.
- ii) Narrative Questionnaire: After the CanU program session is complete you will be asked to complete a short questionnaire about your experience and reflections of Fresh Fuel: The CanU Food Club.

B) *Focus Group*

After the CanU program sessions are complete you will be asked to participate in a focus group. You will have the option of attending one of four focus groups, the one that is more convenient for you. The focus groups will also include Nutrition Coordinators and Mentors. It is expected that there will be no more than 10 participants in each group and will not take longer than 1 hour. This time will be spent to explore your experiences as a volunteer, interaction with participants and ways to improve the Fresh Fuel: The CanU Food Club. The session will be

digitally recorded and you will be provided with beverages and snacks. Please ensure that you do not mention any discussion from the focus group after the group is completed, as all comments and discussions are strictly confidential.

No names will be associated with the information you give, and the results will be reported for the group. Some quotes may be used, but these will be anonymous. Data related to personal information and results obtained including audiotapes will be kept in a locked cabinet in a locked room and destroyed after five years. Additionally, a summary of evaluation results will be provided to CanU for their program development purposes.

Your signature on this form shows that you understand the information regarding participation in the evaluation and agree to serve as a participant. This does not waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so feel free to ask for clarification or new information throughout your participation. Dr. Joyce Slater, from the Department of Human Nutritional Sciences at the University of Manitoba, is conducting this research study (474-7322 or slater@cc.umanitoba.ca).

The Joint-Faculty Research Board of Ethical Review at the University of Manitoba has approved this research study. If you have any concerns or complaints about this project, you may contact the above-named persons or the Human Ethics Secretariat at 474-7122 or email Margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Name (Please Print)

Participant's Signature

Date

Researcher and/or Delegate's Signature

Date

FOR A COPY OF THE STUDY RESULTS, PLEASE COMPLETE THE FOLLOWING:

I would like to receive the results by (check one of the following):

E-mail

Regular Post

E-mail Address

Street Address



UNIVERSITY
OF MANITOBA

Faculty of Human Ecology
Human Nutritional Sciences

310 Human Ecology Bldg.
University of Manitoba
Winnipeg, MB, R3T 2N2
Phone: (204) 474-7322
Fax: (204) 474-7592
Email : slater@cc.umanitoba.ca

CANU COORDINATOR CONSENT FORM

Fresh Fuel: The CanU Food Club-Evaluation

For more information about this study, please contact
JOYCE SLATER, Ph.D.

Faculty of Human Ecology, University of Manitoba
Email: slater@cc.umanitoba.ca Tel: (204) 474-7322

Research Project Title: Impact of pre-adolescent nutrition education: An innovative evaluation of the Fresh Fuel: The CanU Food Club

Researcher: Joyce Slater, RD, PhD and Mihiri Witharana (Master's student)

This consent form, a copy of which will be left with you, is only part of the process of informed consent. It should give you the basic idea of what the study is about and what your participation will involve. Please take the time to read this consent form carefully and understand any accompanying information provided.

The purpose of the research will be to explore your experiences and perceptions in the food lab and CanU Cafe. This will contribute to the larger Fresh Fuel: The CanU Food Club evaluation, which will also explore the program impacts on participants and ways to improve the Food Club.

This study requests your participation in the following:

A) Interview

The interview will be no longer than 1 hour and the time will be used to explore your opinions about the Food Club, your experience as the CanU Coordinator, and your suggestions for program improvement. The session will be digitally recorded. You will be provided with beverages and snacks.

The information obtained in this research will be used to dialogue with the CanU board and funders, and the public; it will also be used to inform future research. If you would like to receive a summary of the results from the interview, complete the section at the end of this consent form.

No names will be associated with the information you give. However, anonymity may be reduced in the event that quotations and/or paraphrases are used in the evaluation findings and you are identifiable by your job title. You will have a chance to review and approve any identifying information before the researchers use it. If you do not approve the use of any identifying information it will not be used. Data related to personal information and results obtained including audiotapes will be kept in a locked cabinet in a locked room and destroyed after 5 years. Additionally, a summary of results will be provided to CanU for their program development purposes.

Your signature on this form shows that you understand the information regarding participation in the evaluation and agree to serve as a participant. This does not waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so feel free to ask for clarification or new information throughout your participation. Dr. Joyce Slater, from the Department of Human Nutritional Sciences at the University of Manitoba, is conducting this research study (474-7322 or slater@cc.umanitoba.ca).

The Joint-Faculty Research Board of Ethical Review at the University of Manitoba has approved this research study. If you have any concerns or complaints about this project, you may contact the above-named persons or the Human Ethics Secretariat at 474-7122 or email Margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Name (Please Print)

Participant's Signature

Date

Researcher and/or Delegate's Signature

Date

FOR A COPY OF THE STUDY RESULTS, PLEASE COMPLETE THE FOLLOWING:

I would like to receive the results by (check one of the following):

E-mail

Regular Post

E-mail Address

Street Address



UNIVERSITY
OF MANITOBA

Faculty of Human Ecology
Human Nutritional Sciences

310 Human Ecology Bldg.
University of Manitoba
Winnipeg, MB, R3T 2N2
Phone: (204) 474-7322
Fax: (204) 474-7592
Email :slater@cc.umanitoba.ca

NUTRITION COORDINATOR CONSENT FORM

Fresh Fuel: The CanU Food Club-Evaluation

For more information about this study, please contact
JOYCE SLATER, Ph.D.
Faculty of Human Ecology, University of Manitoba
Email: slater@cc.umanitoba.ca Tel: (204) 474-7322

Research Project Title: Impact of pre-adolescent nutrition education: An innovative evaluation of the Fresh Fuel: The CanU Food Club

Researcher: Joyce Slater, RD, PhD and Mihiri Witharana (Master's student)

This consent form, a copy of which will be left with you, is only part of the process of informed consent. It should give you the basic idea of what the study is about and what your participation will involve. Please take the time to read this consent form carefully and understand any accompanying information provided.

The purpose of the research will be to explore your experiences and perceptions in the food lab and CanU Cafe. This will contribute to the larger Fresh Fuel: The CanU Food Club evaluation, which will also explore the program impacts on participants and ways to improve the Food Club.

This study requests your participation in the following:

A) *Answering a Questionnaire*

- i) Narrative Questionnaire: After the CanU program session is complete you will be asked to complete a short questionnaire about your experience and reflections of Fresh Fuel: The CanU Food Club.

B) *Dyadic Interview*

The interview will be no longer than 1 hour and the time will be used to explore your opinions about the Food Club, your experience as a Nutrition Coordinator, and your suggestions for program improvement. The interview will include both of the Nutrition Coordinators. The session will be digitally recorded. You will be provided with beverages and snacks.

The information obtained in this research will be used to dialogue with the CanU board and funders, and the public; it will also be used to inform future research. If you would like to receive a summary of the results from the interview, complete the section at the end of this consent form.

No names will be associated with the information you give. However, anonymity may be reduced in the event that quotations and/or paraphrases are used in the evaluation findings and you are identifiable by your job title. You will have a chance to review and approve any identifying information before the researchers use it. If you do not approve the use of any identifying information it will not be used. Data related to personal information and results obtained including audiotapes will be kept in a locked cabinet in a locked room and destroyed after 5 years. Additionally, a summary of results will be provided to CanU for their program development purposes.

Your signature on this form shows that you understand the information regarding participation in the evaluation and agree to serve as a participant. This does not waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so feel free to ask for clarification or new information throughout your participation. Dr. Joyce Slater, from the Department of Human Nutritional Sciences at the University of Manitoba, is conducting this research study (474-7322 or slater@cc.umanitoba.ca).

The Joint-Faculty Research Board of Ethical Review at the University of Manitoba has approved this research study. If you have any concerns or complaints about this project, you may contact the above-named persons or the Human Ethics Secretariat at 474-7122 or email Margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Name (Please Print)

Participant's Signature

Date

Researcher and/or Delegate's Signature

Date

FOR A COPY OF THE STUDY RESULTS, PLEASE COMPLETE THE FOLLOWING:

I would like to receive the results by (check one of the following):

E-mail

Regular Post

E-mail Address

Street Address

APPENDIX B

Research ethics & Compliance approval



APPROVAL CERTIFICATE

September 24, 2013

TO:

FROM:

Re: "Impact of pre-adolescent nutrition education: An innovative evaluation of the CanU Food Club"

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement (2). **This approval is valid for one year only.**

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- If you have funds pending human ethics approval, please mail/e-mail/fax (261-0325) a copy of this Approval (identifying the related UM Project Number) to the Research Grants Officer in ORS in order to initiate fund setup. (How to find your UM Project Number: <http://umanitoba.ca/research/ors/mrt-faq.html#pr0>)
- if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/orec/ethics/human_ethics_REB_forms_guidelines.html) in order to be in compliance with Tri-Council Guidelines.

APPENDIX C

Data collection tools



FOOD LAB QUESTIONNAIRE

Think about today's food lab and fill out one table for each participant. **Do not identify any participant by name.** Circle the number that best represents your experience with each participant. Did each participant:

PARTICIPANT 1	Can't say	Did not	Seldom	Somewhat	Often
1. Focus on the day's task.	0	1	2	3	4
2. Enjoy him/herself (e.g. smiling, doing the activities willingly)	0	1	2	3	4
3. Interact with peers	0	1	2	3	4
4. Interact with mentors	0	1	2	3	4
5. Exhibit understanding of basic food preparation techniques (e.g. measuring, cutting, reading recipes)	0	1	2	3	4
6. Seem familiar with foods being used	0	1	2	3	4
7. Seem familiar with basic food safety techniques (e.g. hand washing, washing fruits and vegetables, cross contamination)	0	1	2	3	4

PARTICIPANT 2	Can't say	Did not	Seldom	Somewhat	Often
1. Focus on the day's task.	0	1	2	3	4
2. Enjoy him/herself (e.g. smiling, doing the activities willingly)	0	1	2	3	4
3. Interact with peers	0	1	2	3	4
4. Interact with mentors	0	1	2	3	4
5. Exhibit understanding of basic food preparation techniques (e.g. measuring, cutting, reading recipes)	0	1	2	3	4
6. Seem familiar with foods being used	0	1	2	3	4
7. Seem familiar with basic food safety techniques (e.g. hand washing, washing fruits and vegetables, cross contamination)	0	1	2	3	4

PARTICIPANT 3	Can't say	Did not	Seldom	Somewhat	Often
1. Focus on the day's task.	0	1	2	3	4
2. Enjoy him/herself (e.g. smiling, doing the activities willingly)	0	1	2	3	4
3. Interact with peers	0	1	2	3	4
4. Interact with mentors	0	1	2	3	4
5. Exhibit understanding of basic food preparation techniques (e.g. measuring, cutting, reading recipes)	0	1	2	3	4
6. Seem familiar with foods being used	0	1	2	3	4
7. Seem familiar with basic food safety techniques (e.g. hand washing, washing fruits and vegetables, cross contamination)	0	1	2	3	4

PARTICIPANT 4	Can't say	Did not	Seldom	Somewhat	Often
1. Focus on the day's task.	0	1	2	3	4
2. Enjoy him/herself (e.g. smiling, doing the activities willingly)	0	1	2	3	4
3. Interact with peers	0	1	2	3	4
4. Interact with mentors	0	1	2	3	4
5. Exhibit understanding of basic food preparation techniques (e.g. measuring, cutting, reading recipes)	0	1	2	3	4
6. Seem familiar with foods being used	0	1	2	3	4
7. Seem familiar with basic food safety techniques (e.g. hand washing, washing fruits and vegetables, cross contamination)	0	1	2	3	4



NARRATIVE QUESTIONNAIRE

Please answer the following questions by describing your experiences at the Fresh Fuel:
The CanU Food Club. **Do not identify any participant by name.**

1. Think back at your time at CanU and
 - a. Describe one memorable event involving a participant (this could be something you observed or experienced).

- b. Describe in one paragraph how your experience with CanU has affected you (e.g. this could be in terms of skills, experiences, relationships, future goals etc.).

'EVALUATION STATIONS': DESCRIPTION AND ANSWER FORM WITH ANSWERS

'Eating an Apple ' Evaluation Station

Description

Purpose: To indicate food safety knowledge. Proper washing of foods was discussed in the *Food Lab*.

Activity: FFPs were asked to write one thing they need to do to before eating an apple. Actual apples were included as props for children to touch and feel. Responses did not need to be spelled correctly.

Answer form

What should you do before you eat an apple:

_____ Wash, rinse or clean _____



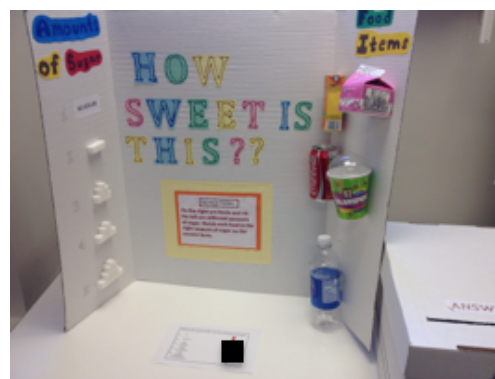
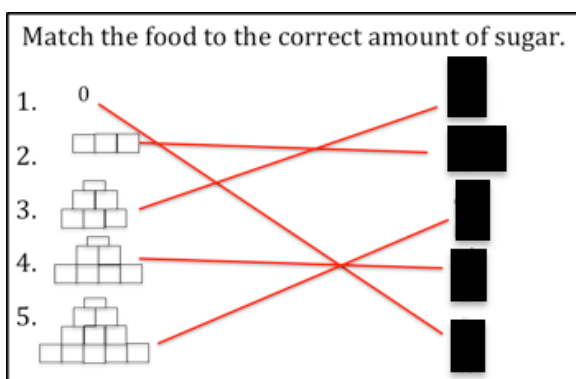
Reference

Apple. Eat a red apple day. *Keeping it Simple (KISBYTO)*. [Digital image]. Retrieved September 4 2013 from <http://kisbyto.blogspot.ca/2011/11/eat-red-apple-day.html>

'How Sweet is This ' Evaluation Station

Description
Purpose: To indicate food and nutrition knowledge. Common beverages were discussed in the <i>Food Labs</i> were selected.
Activity: FFPs were asked to match different amounts of sugar cubes with a food item. The amounts of sugar were presented in order of least to most; therefore, it was only necessary for FFPs to know which items had more or less sugar than the other items.

Answer form



Reference

Aquafina. *Daily Bread Café*. [Digital image]. Retrieved October 16, 2013 from

http://www.dailybreadcafe.ca/wp-content/uploads/2011/11/aquafina_photos.jpg

Coca Cola. Pop for “Pop”- Printable Coke can sleeve. *Oosey daisy*. [Digital image].

Retrieved October 16, 2013 from <http://www.oopseydaisyblog.com/2011/06/pop-for-pop-printable-coke-can-sleeve.html.jpg>

Milk. Bliss! Goodbye to “lactose intolerance.” *The Weird Indian*. [Digital image].

Retrieved October 16, 2013 from

<http://www.precisionnutrition.com/wordpress/wp-content/uploads/2009/11/milk->

carton.bmp

Slurpee. Free Slurpee at 7-eleven on July 11, 2013. *Penny pinching mom*. [Digital image]. Retrieved October 16, 2013 from

<http://www.pennypinchinmom.com/free-slurpee-at-7-eleven-on-july-11-2013/>

SunRype. Sun-Rype Pure Orange Juice 1L X 12. *Super Delivery*. [Digital image].

Retrieved October 16, 2013 from

http://cdn2.bigcommerce.com/server500/83a7f/products/30814/images/51873/sun_rype_orange_juice__13266.1339634584.120.120.jpg





'Name that Food' Evaluation Station

Description

Purpose: To indicate food knowledge. Common foods found in the grocery store that were used in the *Food Labs* were selected.

Activity: Four food items were placed in numbered baskets and participants were asked to name the food item. Actual food times were present for FFPs to touch, and smell to assist identification of foods. Also to assist identification of foods, the answer form had pictures of the food items. Answers that sounded like the correct food name were accepted (i.e. spelling did not matter). Before classifying a response as incorrect responses were also examined to see if an alternative correct term for the food item was used (e.g. capsicum for peppers).

Answer form

Write down the name of the food in each basket.	
1. 	Blueberry or berries
2. 	Tomato
3. 	Peppers
4. 	Onion



Reference

Blueberries. Permaculture Plants: Blueberries. *Temperate Climate Permaculture*. [Digital image]. Retrieved October 16, 2013 from

<http://tpermaculture.blogspot.ca/2012/11/permaculture-plants-blueberries.html>

Fruit boarder. [Digital image]. Retrieved September 4, 2013 from Clipart from

Clipartheaven.com

Onion. Taxonomy- *Allium cepa* (onion). *Uniprot*. [Digital image]. Retrieved October 16, 2013 from

<http://upload.wikimedia.org/wikipedia/commons/thumb/1/1b/Onions.jpg/>

Peppers. *Sun Wing Tomatoes*. [Digital image]. Retrieved October 16, 2013 from [http-](http://www.sunwingtomatoes.ca/peppers.html)

[//www.sunwingtomatoes.ca/peppers.html.jpg](http://www.sunwingtomatoes.ca/peppers.html)

Tomatoes. Food for thought: 25 things to eat to improve your memory. *Pop culture*.

[Digital image]. Retrieved October 16, 2013 from

[http//www.whealthysolutions.com/tomatoes-stroke-prevention/.jpg](http://www.whealthysolutions.com/tomatoes-stroke-prevention/)

'Recipe Time' Evaluation Station

Description

Purpose: To indicate basic food skills. Cooking was the main activity FFPs engaged in; therefore measuring skills were used in the *Food Labs*.

Activity: Participants were asked to measure 1/2 tsp. of sugar and 3/4 cup of water. A researcher was present to indicate on the Checklist if the correct measurements were made.

Instructions: Use the cups and spoons on the table to measure these ingredients: 3/4 cup of water, 1/2 teaspoon of sugar. After measuring do not empty the cups and spoons. Place them on the correct mat.

Checklist

Participant	Correctly measured			
	SUGAR		WATER	
	Yes	No	Yes	No
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				



Reference

Bowl. Cartoon mixing bowl. [Digital image]. Retrieved September 27, 2013 from

<http://ec.l.thumbs.canstockphoto.com/canstock11056960.jpg>

Cupcake. Cupcake clip art- free cupcake and cupcake images. *All About Cupcakes*.

[Digital image]. Retrieved September 4, 2013 from <http://www.all-about->

cupcakes.com/cupcake-clip-art.html

Cupcake. Cupcake drawings to print. *Images and drawings to print*. [Digital image].

Retrieved September 4, 2013 from

[http://www.imagenesydibujosparaimprimir.com/2013/01/dibujos-de-cupcakes-
para-imprimir.html](http://www.imagenesydibujosparaimprimir.com/2013/01/dibujos-de-cupcakes-para-imprimir.html)




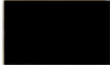
'Food Groups' Evaluation Station

Description

Purpose: To indicate food and nutrition knowledge. Food Groups were discussed in the *Food Labs*.

Activity: FFPs were asked to match the foods to the food groups they belong to. In addition to the 4 food groups, there was an 'other food group' for a food item that was not a best fit with any of the four food groups.

Answer form

Food Groups	Food Item
1. Grain products	<u> 3 </u> Cheese 
2. Meat and Alternatives	<u> 5 </u> Chips 
3. Milk and Alternatives	<u> 1 </u> Bread 
4. Fruits and Vegetables	<u> 2 </u> Tofu 
5. Other Food	



Reference

Cheese. Brits battle for cheesy glory by writing national anthem for cheese. [Digital image]. Retrieved August 6, 2013 from

<http://www.npr.org/sections/thesalt/2012/07/09/156494978/brits-battle-for-cheesy-glory-by-writing-national-anthem-for-cheddar>

Potato chips. Potato chips. *Pop culture*. [Digital image]. Retrieved August 6, 2013 from <http://www.lowcountrybbq.com/potato-chips.html.jpg>

Toast. Ten best things every to put on toast. *Meghan's Blog*. [Digital image]. Retrieved August 6, 2013 from <http://meghanh4.edublogs.org/2011/01/07/ten-best-things-ever-to-put-on-toast/.jpg>

Tofu. Make you own tofu. *Savvy Housekeeping*. [Digital image]. Retrieved August 6, 2013 from <http://www.savvyhousekeeping.com/make-your-own-tofu/.jpg>

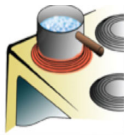





'Risky Chefs' Evaluation Stations

Description

Purpose: To indicate kitchen safety knowledge. Kitchen safety was discussed in the *Food Labs*. Common actions were selected.

Activity: FFPs were asked to indicate whether certain kitchen actions were safe or unsafe.

Answer form

Write a check mark to show if each picture is safe or unsafe.	
1. <input checked="" type="checkbox"/> safe <input type="checkbox"/> unsafe	
2. <input type="checkbox"/> safe <input checked="" type="checkbox"/> unsafe	
3. <input type="checkbox"/> safe <input checked="" type="checkbox"/> unsafe	
4. <input checked="" type="checkbox"/> safe <input type="checkbox"/> unsafe	
5. <input checked="" type="checkbox"/> safe <input type="checkbox"/> unsafe	
6. <input type="checkbox"/> safe <input checked="" type="checkbox"/> unsafe	



Reference

Chef hat. Chef hat clip art. [Digital image]. Retrieved September 25, 2013 from

<http://www.clker.com/cliparts/p/N/4/w/c/z/chef-hat-md.png>

Goodwin, S. Hosig, K. (2010). Kids Kitchen: Play it Safe! *Virginia Cooperative Extension, Virginia Tech and Virginia State University*. Retrieved September 25, 2013 from <http://pubs.ext.vt.edu/348/348-860/348-860.html>

'What is Healthier' Evaluation Station

Description

Purpose: To indicate food and nutrition knowledge. Common foods were chosen. Healthy food alternatives were discussed in the *Food Lab* and consumption of these alternatives were encouraged.

Activity: FFPs were asked to circle one of two items to indicate which is healthier.

Answer form

Circle one food from each question that you think is healthier.							
Food Item							
1.	<table><tr><td><input checked="" type="radio"/> [Redacted]</td><td>OR</td><td><input type="radio"/> [Redacted]</td></tr><tr><td>(Chicken Breast)</td><td></td><td>(Chicken Nuggets)</td></tr></table>	<input checked="" type="radio"/> [Redacted]	OR	<input type="radio"/> [Redacted]	(Chicken Breast)		(Chicken Nuggets)
<input checked="" type="radio"/> [Redacted]	OR	<input type="radio"/> [Redacted]					
(Chicken Breast)		(Chicken Nuggets)					
2.	<table><tr><td><input checked="" type="radio"/> [Redacted]</td><td>OR</td><td><input type="radio"/> [Redacted]</td></tr><tr><td>(Yogurt)</td><td></td><td>(pudding)</td></tr></table>	<input checked="" type="radio"/> [Redacted]	OR	<input type="radio"/> [Redacted]	(Yogurt)		(pudding)
<input checked="" type="radio"/> [Redacted]	OR	<input type="radio"/> [Redacted]					
(Yogurt)		(pudding)					
3.	<table><tr><td><input checked="" type="radio"/> [Redacted]</td><td>OR</td><td><input type="radio"/> [Redacted]</td></tr><tr><td>(Peanuts)</td><td></td><td>(Chips)</td></tr></table>	<input checked="" type="radio"/> [Redacted]	OR	<input type="radio"/> [Redacted]	(Peanuts)		(Chips)
<input checked="" type="radio"/> [Redacted]	OR	<input type="radio"/> [Redacted]					
(Peanuts)		(Chips)					
4.	<table><tr><td><input type="radio"/> [Redacted]</td><td>OR</td><td><input checked="" type="radio"/> [Redacted]</td></tr><tr><td>(Fruit Snacks)</td><td></td><td>(Grapes)</td></tr></table>	<input type="radio"/> [Redacted]	OR	<input checked="" type="radio"/> [Redacted]	(Fruit Snacks)		(Grapes)
<input type="radio"/> [Redacted]	OR	<input checked="" type="radio"/> [Redacted]					
(Fruit Snacks)		(Grapes)					



Reference

Chicken breast. Eating the same foods week after week when cutting: why I do it.

[Digital image]. Retrieved August 6, 2013 from [http-](http://www.johnstonefitness.com/2012/01/31/eating-the-same-foods-week-after-week-when-cutting-why-i-do-it/)

[//www.johnstonefitness.com/2012/01/31/eating-the-same-foods-week-after-week-when-cutting-why-i-do-it/](http://www.johnstonefitness.com/2012/01/31/eating-the-same-foods-week-after-week-when-cutting-why-i-do-it/).jpg

Chicken nuggets. What's really in that children nugget? *National Chicken Council*.

[Digital image]. Retrieved August 6, 2013 from <http://www.nationalchickencouncil.org/whats-in-those-chicken-nuggets/.jpg>

Fruit snacks. Horror movies, fruit snacks and chocolate chip waffles. *Busy Busy Busy A Blog by Jacob Divett*. [Digital image]. Retrieved August 6, 2013 from <http://jacobdivett.blogspot.ca/2010/05/horror-movies-fruit-snacks-and.html.jpg>

Grapes. Grapes. *Green Market Global Import & Export*. [Digital image]. Retrieved August 6, 2013 from <http://greenmarketglobal.com/products/grapes/>

Peanuts. Birdsong Peanuts. [Digital image]. Retrieved August 6, 2013 from <http://www.birdsong-peanuts.com.jpg>

Potato chips. Potato chips. *Pop culture*. [Digital image]. Retrieved August 6, 2013 from <http://www.lowcountrybbq.com/potato-chips.html.jpg>

Pudding. Ten minute chocolate fix: Creamy Nutella pudding. [Digital image]. Retrieved August 6, 2013 from http://3.bp.blogspot.com/-Pu_SMZBN-tU/UKKmK6m07I/AAAAAAAAADvc/-zptNOR7EMA/s400/

Question marks. A geek peek at 2012. *Randomgeekings*. [Digital image]. Retrieved September 8, 2013 from <http://randomgeekings.files.wordpress.com/2012/01/question-marks.jpg>

Yogurt. *WiseGeek*. [Digital image]. Retrieved August 6, 2013 from <http://www.wisegeek.com/what-is-the-difference-between-yogurt-versus-greek-yogurt.htm#.jpg>

'Let's Learn' Evaluation Station

Pre-program only

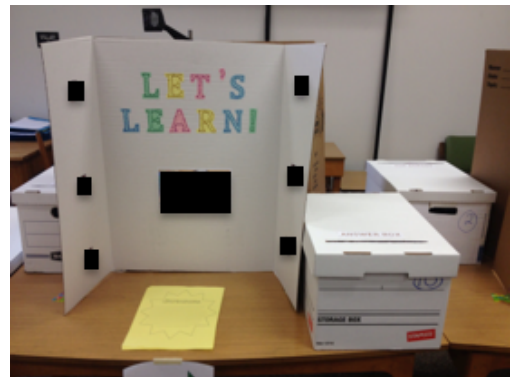
Description

Purpose: To indicate food and nutrition knowledge and/skills.

Activity: During the pre-program data collection FFPs were asked what they would like to learn at *Fresh Fuel*. A comparison was made between pre and post program 'Let's Learn' Evaluation Station responses on what FFPs wanted to learn and what they learned. To ensure a full range of responses an open-ended question selected.

Answer form

What would you like to learn at
Fresh Fuel: The CanU Food Club?



Reference

Chef. [Digital image]. Retrieved October 22, 2013 from myrealreview.ca/jpg

Food containers. The Digi Butterfly Clipart. [Digital image]. Retrieved October 22, 2013

from www.printcandee.com/png

'Let's Learn' Evaluation Station

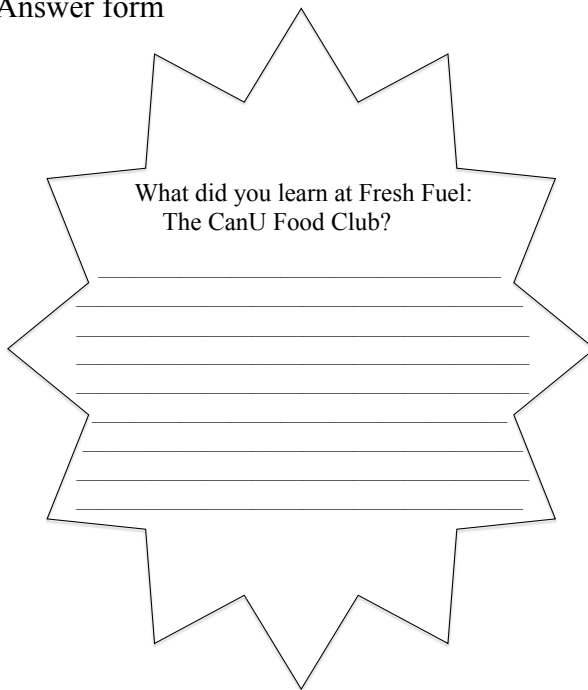
Post-program only

Description

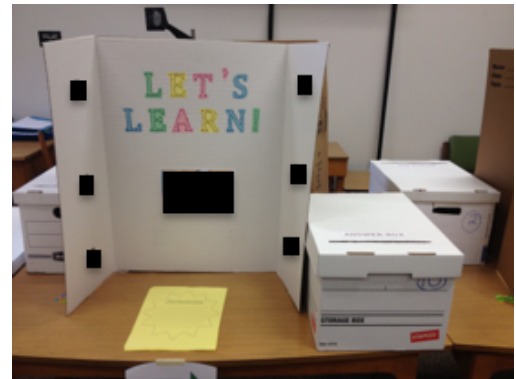
Purpose: To indicate food and nutrition knowledge and skills. Compared with pre program 'Let's Learn' Evaluation Station.

Activity: During the pre-program data collection station participants were asked what they learned at *Fresh Fuel*.

Answer form



What did you learn at Fresh Fuel:
The CanU Food Club?



Reference

Chef. [Digital image]. Retrieved October 22, 2013 from myrealreview.ca.jpg

Food containers. The Digi Butterfly Clipart. [Digital image]. Retrieved October 22, 2013 from www.printcandee.com.png

' Help CanU grow' Evaluation Station:

Post-program only

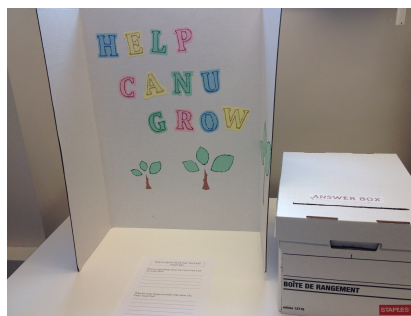
Description

Purpose: To indicate program enjoyment.

Activity: During the post-program data collection FFPs were asked what they liked about coming to *Fresh Fuel* and what they did not like about it. Two open-ended questions were asked so that FFPs could express both opinions.

Answer form

Help us improve Fresh Fuel: The CanU Food Club!
What are some things about The CanU Food Club you really liked?
What are some things you didn't like about The CanU Food Club?



'Bingo' Evaluation Station

Posttest only

Description

Purpose To indicate FFP engagement and change in behavior. FFPs encountered new foods in the *Food Labs*. Also, volunteers, practicum students and staff encouraged consumption of these foods and encouraged positive food and nutrition changes at home.

Activity: At this post-test data collection station FFPs were asked to use a bingo dabber to mark their answers. One open-ended question asked FFPs who indicated 'Yes' to making a behavior change to explain what they were.

Answer form:

Use the bingo dabber to answer the questions. You may need to write for question #3.			
BINGO			
	YES	NO	I'M NOT SURE
1. If you could, would you come back to The CanU Food Club next year?			
2. Did you try new foods at The CanU Food Club?			
3. Did you make any changes at home because of something you learned at The CanU Food Club?			
	If yes explain here:		



Key Informant Interview

Guiding Questions

Introduction:

Hi. My name is _____. I have asked you to participate in the evaluation of the Fresh Fuel: The CanU Food Club. I would like to hear about the Fresh Fuel: The CanU Food Club from your perspective, hear stories of your interactions with the participants and your suggestions to improve the program. There are no “right” or “wrong” answers to the questions I am going to ask you. Also, if you don’t understand the question or have questions please ask. We will be recording our conversation, so I can listen to it after and better understand what you have told us. All information you tell us will be kept locked in a room at the University of Manitoba. . Since these are only two Café Assistants there is a possibility of reduced anonymity but you will have a chance to review any identifying information before it is used.

Guiding Questions:

1. We will now talk about your experiences in Fresh Fuel. Did your experiences meet your expectations coming into the program?
 - If so, could you explain how they did?
 - If they did not, could you explain how they did not?

2. What worked well in Fresh Fuel?
 - Could you please tell me more about...
 - Could you give me an example of...
3. What didn't work well Fresh Fuel?
 - Could you please tell me more about...
 - Could you give me an example of...
4. Is there anything about Fresh Fuel you would recommend improving or changing in the future?
5. If there is one thing you would want people to know about this program, what would it be?

At end of session:

We want your help to improve The Food Club to give the children the best experience. Is there anything that we missed? Is there anything that you didn't get a chance to say?

Thank you all for sharing your experiences here today.

Materials:

- a. Data recorder
- b. Food and drinks

Key Informant Interview

Guiding Questions

Introduction:

Hi. My name is _____. I have asked you to participate in the evaluation of the Fresh Fuel: The CanU Food Club. I would like to hear about the Fresh Fuel: The CanU Food Club from your perspective, hear stories of your interactions with the participants and your suggestions to improve the program. There are no “right” or “wrong” answers to the questions I am going to ask you. Also, if you don’t understand the question or have questions please ask. We will be recording our conversation, so I can listen to it after and better understand what you have told us. All information you tell us will be kept locked in a room at the University of Manitoba. Since you are the only Nutrition Director there is a possibility of reduced anonymity but you will have a chance to review any identifying information before it is used.

Guiding Questions:

1. We will now talk about your experiences in Fresh Fuel. Did your experiences meet your expectations coming into the program?
 - If so, could you explain how they did?
 - If they did not, could you explain how they did not?
2. What worked well in Fresh Fuel?

- Could you please tell me more about...
 - Could you give me an example of...
3. What didn't work well in Fresh Fuel?
 - Could you please tell me more about...
 - Could you give me an example of...
 4. Is there anything about Fresh Fuel you would recommend improving or changing in the future?

At end of session:

We want your help to improve The Food Club to give the children the best experience. Is there anything that we missed? Is there anything that you didn't get a chance to say?

Thank you all for sharing your experiences here today.

Materials:

- a. Data recorder
- b. Food & drinks

Follow up interview

Guiding Questions

Introduction:

I have asked you to participate in this follow-up interview because I wanted to make sure I understood your responses from the initial interview. Specifically, I wanted to clarify lesson plan development and the jobs, responsibilities and roles in Fresh Fuel. There are no “right” or “wrong” answers to the questions I am going to ask you. Also, if you don’t understand the question or have questions please ask. We will be recording our conversation, so I can listen to it after and better understand what you have told us. All information you tell us will be kept locked in a room at the University of Manitoba. . Since you are the only Nutrition Director there is a possibility of reduced anonymity but you will have a chance to review any identifying information before it is used.

Guiding questions:

1. Could you describe what your role was in Fresh Fuel?
 - What were some of your main duties?
2. Did you have any added responsibilities or changes in duties after the program stated?
 - If so, what were they?
3. What was your role in planning, administering and implementing the Food Lab?

- Could you describe your interactions with the Nutrition Coordinators?
4. What was your role in planning, administering and implementing the CanU Café?
 - Could you describe your interactions with the CanU Café?

At end of session:

Thank you all for sharing your experiences here today.

Key Informant Interview

Guiding Questions

Introduction:

Hi. My name is _____. I have asked you to participate in the evaluation of the Fresh Fuel: The CanU Food Club. I would like to hear about Fresh Fuel: The CanU Food Club from your perspective, hear stories of your interactions with the participants and your suggestions to improve the program. There are no “right” or “wrong” answers to the questions I am going to ask you. Also, if you don’t understand the question or have questions please ask. We will be recording our conversation, so I can listen to it after and better understand what you have told us. All information you tell us will be kept locked in a room at the University of Manitoba. Since you are the only CanU Coordinator there is a possibility of reduced anonymity but you will have a chance to review and approve any identifying information before it is used.

Guiding Questions:

1. In your own words what are the goals of Fresh Fuel?
2. We will now talk about your experiences in Fresh Fuel. What were your duties and responsibilities?
3. What worked well in Fresh Fuel?
 - Could you please tell me more about...

- Could you give me an example of...
4. What didn't work well Fresh Fuel?
 - Could you please tell me more about...
 - Could you give me an example of...
 5. Is there anything about Fresh Fuel you would recommend improving or changing in the future?

At end of session:

We want your help to improve The Food Club to give the children the best experience. Is there anything that we missed? Is there anything that you didn't get a chance to say?

Thank you all for sharing your experiences here today.

Materials:

- c. Data recorder
- d. Food & drinks

Key Informant Interview

Guiding Questions

Introduction:

Hi. My name is _____. I have asked you to participate in the evaluation of the Fresh Fuel: The CanU Food Club. I would like to hear about Fresh Fuel: The CanU Food Club from your perspective, hear stories of your interactions with the participants and your suggestions to improve the program. There are no “right” or “wrong” answers to the questions I am going to ask you. Also, if you don’t understand the question or have questions please ask. We will be recording our conversation, so I can listen to it after and better understand what you have told us. All information you tell us will be kept locked in a room at the University of Manitoba. Since there are only two Nutrition Coordinators there is a possibility of reduced anonymity but you will have a chance to review any identifying information before it is used.

Guiding Questions:

1. We will now talk about your experiences in Fresh Fuel. As a practicum student did participating in Fresh Fuel meet your expectations?
 - If so, could you explain how they did?
 - If they did not, could you explain how they did not?
 - What did you want to gain from this experience? Did you gain them?
2. How did you feel about your ability to complete your tasks in the time you had?

3. What worked well?
 - Could you please tell me more about...
 - Could you give me an example of...
4. What didn't work well?
 - Could you please tell me more about...
 - Could you give me an example of...
5. Could you please tell me more about your positive and/or less positive experiences in:
 - Administering the Food Lab sessions
 - Developing the lesson plans,
 - Implementing the lesson plans
 - The interaction between the Food Lab and CanU Café
 - Organizing the volunteers and adequacy of volunteers
2. Is there anything about Fresh Fuel you would recommend improving or changing in the future?

At end of session:

We want your help to improve The Food Club to give the children the best experience. Is there anything that we missed? Is there anything that you didn't get a chance to say?

Thank you all for sharing your experiences here today.

Materials:

- e. Data recorder
- f. Food & drinks

Follow up interview

Guiding Questions

Introduction:

I have asked you to participate in this follow-up interview because I wanted to make sure I understood your responses from the initial interview. Specifically, I wanted to clarify lesson plan development and responsibilities and roles in Fresh Fuel. There are no “right” or “wrong” answers to the questions I am going to ask you. Also, if you don’t understand the question or have questions please ask. We will be recording our conversation, so I can listen to it after and better understand what you have told us. All information you tell us will be kept locked in a room at the University of Manitoba. Since there are only two Nutrition Coordinators there is a possibility of reduced anonymity but you will have a chance to review any identifying information before it is used.

Guiding Questions:

1. Could you describe what your role in Fresh Fuel was?
 - When you first started was this what you believed you would be doing?
2. Now lets talk about the Food Lab sessions. Who was responsible for developing the lesson plans?
3. What were the main considerations in developing the lesson plans

- What instructions were you given prior to developing, and implementing lesson plans
 - Did you have an overall goal for each lesson plan?
 - Did you focus on specific topics? What were some main ones?
 - Could you describe what you wanted the participants to gain from the lessons?
 - What made you want to focus on that?
 - Could you describe a typical Food Lab session?
4. Did you make any changes in the lessons from last year?
- If so, what did you change and why?
 - How consistent were the lesson plans throughout the year in terms of topic, amount of time allocation to certain activities or in other aspects?
5. Any suggestions to improve future lesson plans?

At end of session:

Thank you all for sharing your experiences here today.

Materials:

- g. Data recorder
- h. Food & drinks

Focus Group

Moderator's Guide

Introduction:

Hi. My name is _____ and this is _____. I have asked you to participate in the evaluation of the Fresh Fuel: The CanU Food Club. I would like to hear about the Fresh Fuel: The CanU Food Club from your perspective, hear stories of your interactions with the participants and your suggestions to improve the program. There are no “right” or “wrong” answers to the questions I am going to ask you. We want everyone to talk, so please don't feel shy! Also, if you don't understand the question or have questions for us, please ask. We will be recording our conversation, so we can listen to it after and better understand what you have told us. All information you tell us will be kept locked in a room at the University of Manitoba, and no information you provide us with will be able to identify you. To ensure that everyone's responses are kept confidential we ask you not to discuss anything that you hear today once the focus group is over. If you would like to discuss something you hear today after the focus group you could contact the researcher.

How this focus group will work:

This discussion will last about 1 ½ hours. I will ask you some questions about your experiences and sometimes I will ask everyone in the room but for most of the questions feel free to talk about it in a group. If you feel uncomfortable for any reason at any point

during the focus group you are free to leave and if there is anything that comes up that you want to talk to me about we can do that at the end of the focus group.

Guiding Questions:

1. We will start off with your experiences in Fresh Fuel. What are some positive experiences in Fresh Fuel?
2. What are some less positive experiences in Fresh Fuel?
3. Did your experience turn out to be as you expected or different from your expectations?
 - If so, could you explain how they did?
 - If they did not, could you explain how they did not?
4. Next, we will talk about your observations and perceptions of participants. Did you notice any changes in the participants?
 - What are some positive observations and perceptions?
 - What are some less positive observations and perceptions?
5. We will now talk about how Fresh Fuel has impacted you. Has anything changed for you personally or academically since participating in Fresh Fuel?
 - If so, can you give me an example of:
 - Something that you learned?
 - Something you think about differently?
 - If no, why?

- Was volunteering in Fresh Fuel enjoyable?
6. Is there anything about Fresh Fuel you would recommend improving or changing in the future?
 7. If there is one thing you would want people to know about this program, what would it be?

At end of session:

We want your help to improve The Food Club to give the children the best experience. Is there anything that we missed? Is there anything that you didn't get a chance to say?

Thank you all for sharing your experiences here today.

Materials:

- c. Data recorder
- d. Food and drinks