



Evaluation of the Community Food Advisor Program:

Assessing the transfer of food skills to trained volunteer peer educators

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I. EXECUTIVE SUMMARY

Background:

Food Skills is not well defined or commonly understood by those working in public health nutrition. It was added to the Ontario Public Health Standards in 2008. Since then public health practitioners have been working toward a common understanding of the concept of “food skills” and indicators for measurement.

The Community Food Advisor (CFA) program is a volunteer, peer education program that has been running in Ontario since 1992. Volunteer peer educators are required to participate in a 14 to 21 week program which includes in-class cooking demonstrations, presentations, small group cooking activities, and take home assignments. Upon successful completion of the training program and subsequent community placement, volunteer peer educators become certified as Community Food Advisors (CFAs) and work in their community to improve and promote safe and healthy food selection, preparation and storage practices.¹ Thus it seems that a key goal of the CFA program is to develop food skills of the volunteer peer educators so that they in turn can transfer food skills to community participants.

In spring 2010, the CFA program undertook an evaluation to assess the capacity and impact of the training program with respect to food skill development among CFAs. The evaluation focused on several components:

- (1) development of an operational definition for “food skills”;
- (2) drafting a conceptual model to illustrate the theoretical mechanisms required for food skill development within the CFA program;
- (3) conducting an audit of CFA training materials to determine if core constructs associated with food skill development are addressed in the training program; and
- (4) assessing the level of food skills currently possessed by trained CFAs.

Methods:

A short review of the peer-reviewed literature was conducted to identify how “food skills” has been defined and conceptualized (Appendix I). Analysis consisted of reviewing how “food skills” or “cooking skills” were interpreted and defined by the various sources, identifying common themes/concepts emerging around the terms and developing a definition based on the constructs that were cited most frequently. Based on results of the literature scan, a conceptual model was developed to illustrate possible relationships between concepts and a proposed theoretical mechanism for how food skills are developed within individuals.

¹ CFA logic model, 1996, 2004

CFA training materials (facilitators Training Manual – core sessions 1-12 and CFA Resource Binder²) were reviewed in detail to determine if content aligned with the key concepts identified within the food skills conceptual model. When auditing training materials, the evaluator identified and recorded activities, demonstrations and exercises that addressed a particular skill or knowledge concept (Appendix II). Once completed, the evaluator identified areas within the course that were well addressed and areas that may need to be addressed further.

To assess food skills among active, trained CFAs in Ontario, a 45-question, online survey was developed in summer 2010. The survey assessed to domains of : *food preparation skills, academic knowledge, cooking experience, household roles, built environment and food security*. A draft of the survey was pilot tested by 5 active CFAs in September 2010. Survey questions were revised based on feedback received.

In fall 2010, CFA Site Coordinators (16 active program sites) were emailed information about the survey (e.g., purpose, how it was developed) and were asked to forward information and a link to the online survey to all active CFAs in their region. Information and a link to the online survey was also distributed on the CFA listserv. To increase participation, respondents had the choice to enter their name in to a draw for eight grocery store gift certificates valued at \$25.00. Survey data were analyzed using descriptive statistics (e.g., frequencies, percentages, ratios and averages).

Results:

“Food skills” was defined as: *a collection of skills/techniques that are used to transform basic food ingredients into culturally appropriate meals suitable for consumption*. A conceptual model illustrating the development of food skills within the CFA program was developed (Figure 1).

Program Material Audit

Results from the program material audit indicate that conceptual and perceptual skills were both well addressed in the CFA training program. Further opportunities to develop both mechanical and planning skills should be added into the program. It was recommended that basic culinary training be included early on in the program to address proper knife techniques and more advanced cooking skills (e.g., grilling, poaching, canning, etc.). As well, program participants may benefit from additional training / practice in preparing multi-component meals.

In terms of academic knowledge topics, the topics of nutrition, safe food handling and food storage were well addressed within the training program. A recommendation was made to address the topics of built environment, cooking culturally appropriate meals and peak season

² Materials are available at www.communityfoodadvisor.ca

for fruits and vegetables in greater depth. For example, to further expand the topic of cooking culturally appropriate meals, the CFA program could feature recipes from different cultural groups during each session.

Food Skills Survey

The food skills survey was an attempt at gathering a one-time 'snapshot' of current food skill capacities among trained CFAs in the province. CFAs report using mechanical skills frequently and have the ability to judge the texture and quality of foods (i.e., perceptual skills). CFAs reported having moderate conceptual skills, indicating the need to further focus on the development of these skills during the CFA training program. It is difficult to ascertain CFA's capacities with respect to planning skills, as results from these survey questions were varied. In terms of academic knowledge, survey results indicate their may be need to further emphasize the topics of safe food handling, and recipe modification (to make them healthier). It is notable that most of the CFA respondents (53%) reported always following Canada's Food Guide in comparison to the 43.3% of the general population.³

The survey tool was not tested for validity or reliability prior to use and thus the survey results, need to be interpreted with caution.

Summary of Recommendations:

- 1) Using the CFA listserv, active CFAs should be encouraged to continue to share their tips and strategies with other CFAs after they have completed the course (enhancing conceptual and teaching skills).
- 2) Participants should have the opportunity to sample and complete a sensory evaluation form for instructor-led cooking demonstrations in addition to the cooking together activities. Participants could sample and rate these dishes in terms of the appearance, texture, flavor, etc.
- 3) Participants should have more opportunities to practice judging the ripeness of various fruits and vegetables.
- 4) Basic culinary/chef training should be included early on in the program to addresses proper knife technique and more advanced cooking skills (e.g., grilling, poaching, canning, etc.).
- 5) Participant mechanical skills should be assessed during participant's classroom presentation and participants should receive on-going feedback and additional training as needed to develop their mechanical skills to a level suitable for public food demonstrations.
- 6) Additional multi-component, hands on cooking activities where participants have more than one dish to prepare at once within a set time frame should be added to

³ Extrapolated from Statistics Canada Data for % of Canadians who eat 5 or more vegetable or fruit servings per day <http://www.statcan.gc.ca/pub/82-625-x/2011001/article/11461-eng.htm>

- the training where possible. As well, additional training may be needed to equip CFAs to teach / transfer this skill for meal timing to their audience.
- 7) The CFA program may want to include vacuum packing and drying foods as additional ways to preserve foods (further to canning and freezing).
 - 8) Further expand the topic of built environment and how it affects access to fresh, affordable foods. When planning a community food demonstration, CFAs should be trained to consider what kind of access the participants have to ingredients included in the presentation.
 - 9) Culturally diverse foods and cooking could be threaded throughout the training program. For example, cooking demonstrations could feature recipes from different cultural groups and participants could discuss how the recipe could be modified to suit different cultural groups and/or religions.
 - 10) Local groups are encouraged to become familiar with different cultural groups in their area and include optional education and training after certification.
 - 11) The topic of selecting fruits and vegetables based on when they are seasonally available in Ontario should be incorporated into the training materials.

II. DEVELOPMENT OF “FOOD SKILLS” OPERATIONAL DEFINITION & CONCEPTUAL MODEL

Purpose:

(1) To conduct a nonsystematic review of the peer-review literature to identify how “food skills” has been defined and conceptualized; (2) based on the results of the literature scan, to develop an operational definition of food skills; and (3) to develop a conceptual model to illustrate proposed theoretical mechanisms required for food skill development.

Methods:

Literature Scan

An online search through the Scholar’s Portal database (University of Toronto Library System) was conducted on February 28, 2010 and March 7, 2010. Building on the literature and document review conducted by the Region of Waterloo Public Health (2008), this scan used similar key words to search the database (i.e., “food skill” and “cooking skill”).⁴ Only peer-reviewed articles available electronically in English were reviewed. Articles that provided a definition for “food skills”, described key concepts associated with food skills, and/or included a tool to measure food skills was recorded in a summary chart (Appendix I).

Development of an Operational Definition & Conceptual Model

Analysis consisted of reviewing how “food skills” or “cooking skills” were interpreted and defined by the various sources, identifying common themes/concepts emerging around the terms and developing a definition based on the constructs that were cited most frequently. The CFA Program Coordinator and other program stakeholders reviewed the proposed definition and provided feedback which was incorporated in to a final version of the operational definition.

A conceptual model was developed to illustrate possible relationships between concepts that emerged from the literature scan. It also proposed a theoretical mechanism for how food skills are developed within individuals. Several drafts of the conceptual model were reviewed by the CFA Program Coordinator and other program stakeholders to determine if the model resonated with their understanding of and experience with food skill development. (Note: the conceptual model served as a tool in the evaluation to organize central concepts and to propose a possible mechanism for food skill development, it was not based on research evidence, nor was it validated by researchers in this field).

Results:

⁴ Region of Waterloo Public Health. (January, 2010). *Food skills of Waterloo region adults*. Accessed March 10, 2010 from: <http://chd.region.waterloo.on.ca/>

Literature Scan

There were a total of 36 hits in the “food skills” keyword search and 129 hits in the “cooking skills” keyword search. Of these hits, 6 and 12 articles were found to be relevant and were included in the summary chart (Appendix I). (Note: an additional source, Ternier, 2010 was identified through a Google search during the development of the food skill survey).

The concept of “food skills” was described using a variety of terms including: cooking skills, culinary skills, food preparation and cooking methods. For the purposes of this evaluation, “food skills” was defined as:

A collection of skills/techniques that are used to transform basic food ingredients into culturally appropriate meals suitable for consumption.

After reviewing how the key term was interpreted and defined by various sources, a number of common themes and concepts emerged around the term “food skills”. They include:

- Food skills require *basic knowledge* of ingredients, preparation methods, safe food handling, and cooking times.
- It involves the *tasks* of menu-planning, food selection, purchasing, preparation and consumption.
- Individual *spontaneity* and *creativity* are associated with food skills.
- Development of food skills requires ‘*hands on*’ experience.
- *Family roles* affect the acquisition of food skills.
- While cooking skills and their application are typically viewed as an individual behaviour or lifestyle choice, the acquiring of such skills relies on structural/societal factors such as cultural norms and educational policy. There are concerns about the “deskilling” of generations with more reliance on convenience foods.
- Argument that food skills could concentrate on generating and encouraging proper attitudes to healthy and nutritious eating and fostering an awareness of “what food is”.

Conceptual Model

Figure 1 outlines a proposed model for food skill development within the CFA training program. This model applies to both volunteer peer educators training to be CFAs and also to community participants who participate in the CFA program.

In the model, food preparation skills (e.g., mechanical, perceptual, conceptual and planning) as well as food preparation knowledge (e.g., safe food handling, nutrition, budgeting, etc.) are introduced, practiced and applied within the CFA program. The development of new skills, in combination with new knowledge and exposure to cooking, is thought to lead to increased self-efficacy and positive attitudes towards food preparation. This in turn leads to changes in food selection and ultimately, eating behaviour.

Affecting the development of food skills acquisition are the concepts of family/household roles, built environment and food security. Where household roles refers to the unique 'family culture' that affects the development of food skills with individual members. For example, certain members may be expected to take on the responsibility of food preparation (e.g., female family members) and this would impact the development of food skills among male household members. Also, food selection and eating habits would be affected by culture, religious beliefs and individual tastes of different members of the family. Food security refers to both physical and economic access to food that meets people's dietary needs as well as their food preferences.⁵ Individuals who are food insecure would be limited in what foods they can select and this may impact their exposure to different ingredients and preparation methods. Similarly, the built environment also affects the development of food skills. For example, northern Ontario communities may have limited access to fresh foods and this would impact exposure to different ingredients and preparation methods. Alternatively, a community may have a high density of fast food restaurants and this may lead residents to choose convenience foods more often instead of cooking at home.

Together, the concepts presented in the conceptual model were used as a basis to audit the CFA training program materials and to develop a food skills questionnaire.

⁵ World Health Organization. (2011). Food Security. Available online from: <http://www.who.int/trade/glossary/story028/en/>

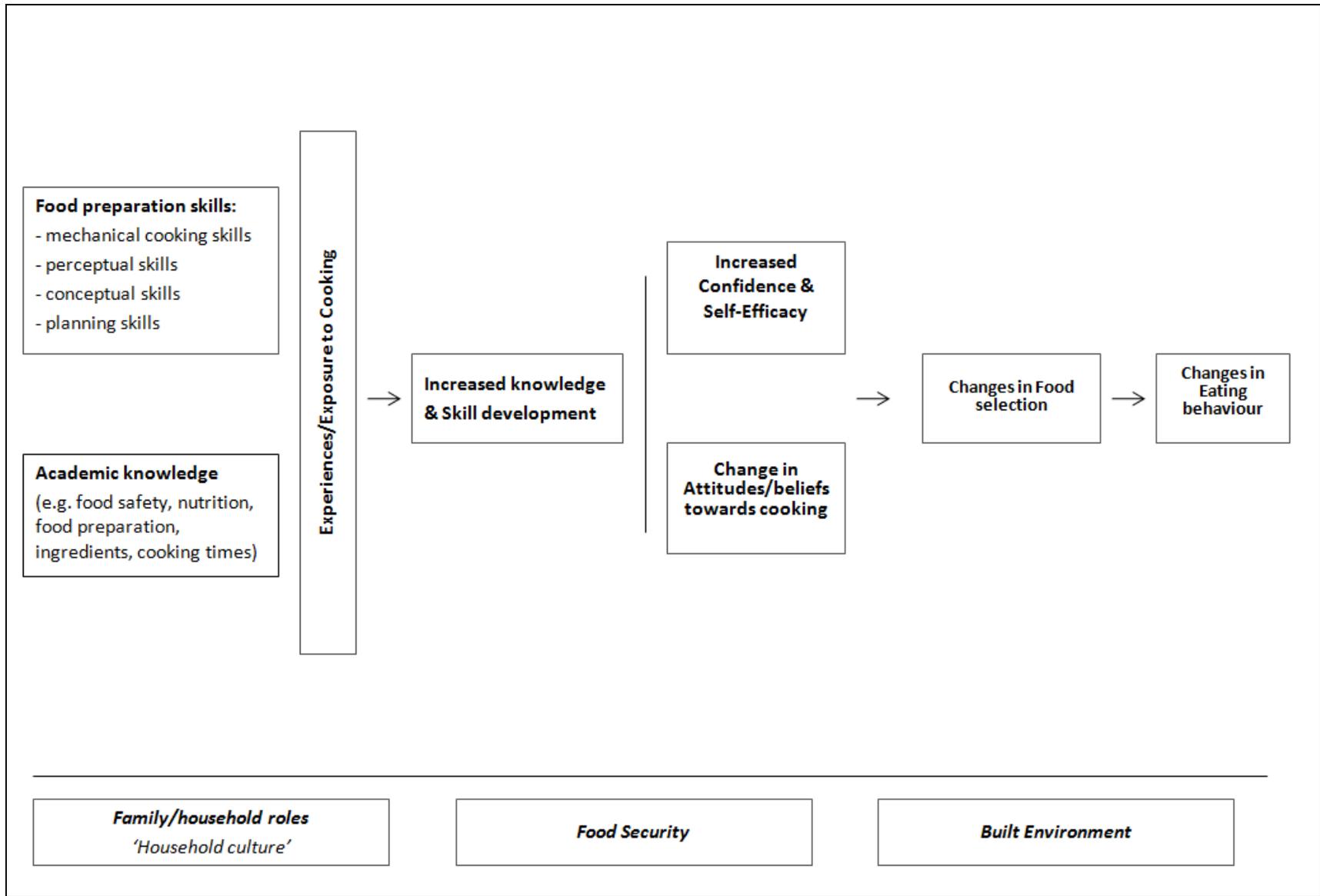


Figure 1: Proposed Conceptual Model Illustrating the Development of Food Skills within the CFA Program.

III. PROGRAM MATERIAL AUDIT RESULTS & RECOMMENDATIONS

Purpose:

To assess if the current CFA training program addresses topics and develops skills that are integral to the development of food skills among participants.

Methods:

The CFA training materials (facilitators Training Manual and CFA Resource Binder)⁶ were reviewed in detail to determine if content aligned with the key concepts identified within the food skills conceptual model. Within the conceptual model, food skill acquisition was divided into the development of skills and knowledge. Several skills were identified as being necessary for food skill development (i.e., mechanical, conceptual, planning and perceptual skills), as well as several knowledge areas (e.g., safe food handling, nutrition, etc.). When auditing training materials, the evaluator identified and recorded activities, demonstrations and exercises that addressed a particular skill or knowledge concept (Appendix II). Once completed, the evaluator identified areas within the course that were well addressed and areas that may need to be addressed further.

Results:

Food Preparation Skills Addressed Well:

- **Conceptual skills:** The CFA training program included a variety of exercises and activities to develop participant’s conceptual skills. For example: menu planning, thinking of new ways to use leftovers, recommending recipes for different community groups, thinking of creative ways to cook on a budget, etc. These skills are difficult to teach in lecture format and are more likely to be developed through experience and group learning. The CFA training program incorporates the building of conceptual skills throughout most sessions and encourages group discussion to share ideas.
 - Using the CFA listserv, active CFAs should be encouraged to continue to share their tips and strategies with other CFAs after they have completed the course.
- **Perceptual skills:** Participants have the opportunity to further develop their perceptual skills in a variety of exercise and activities during sessions five through eight (e.g., taste testing a dish prepared during “cooking together” activities, discussing how to judge the freshness of fish and eggs, and judging when meat has been properly cooked). After several cooking demonstrations and taste testing, participants are asked to complete a sensory evaluation worksheet.

⁶ Materials available at www.communityfoodadvisor.ca. The CFA Resource Binder is a collection of reference materials and other resources provided to each CFA during training.

- A recommendation is to give participants the opportunity to sample and complete a sensory evaluation form for instructor-led cooking demonstrations in addition to the cooking together activities. Participants could sample and rate these dishes in terms of the appearance, texture, flavor, etc.
- Another recommendation is to include an activity where participants have the opportunity to practice judging the ripeness of various fruits and vegetables.

Food Preparation Skills that May Need Further Attention

- **Mechanical skills:** While participants have the opportunity to observe a number of cooking demonstrations (more than 15 across 12 training sessions), there are approximately five opportunities for hands on cooking and these opportunities are typically in small groups. Participants are likely to enter the training program with varied cooking experience and may have ‘old habits’ that could be unsafe and inefficient. Since they will be leading food demonstrations in the community, it is important that they demonstrate proper cooking techniques.
 - Recommendation to include basic culinary/chef training early on in the program that addresses proper knife technique and more advanced cooking skills (e.g., grilling, poaching, canning, etc.).
 - Recommend assessing mechanical skills during participant’s classroom presentation.
 - Recommend providing ongoing participant feedback and offer additional classes for those CFAs that need additional practice to develop their mechanical skills.
- **Planning skills:** Planning skills are addressed within the CFA training program in the following ways: planning a menu, making a shopping list, and planning a cooking demonstration. Planning skills, as a component of food skills, refers more to the ability of the cook to conceptualize the sequence of activities that must occur simultaneously for a meal to ‘come together’ within a specific timeframe. In order for all the components to come together seamlessly, the participant must plan the sequence and timing of each component in advance. For example, when preparing a turkey dinner there are typically many side dishes that need to be prepared simultaneously while the turkey is cooking (e.g., vegetables, potatoes, gravy, etc.). Planning skills are used to determine the sequence of dishes to be prepared and the timing of each. It also involves building in time for clean up and food storage.
 - Recommend including additional multi-component, hands on cooking activities where participants have more than one dish to prepare at once within a set time frame. Before beginning to cook, the participant should have time to plan the sequence of dishes they will prepare and build in time for clean up and storage.
 - Additional attention may also be needed in terms of equipping the CFAs to teach / transfer this skill for meal timing to their audience.

Academic Knowledge Topics Addressed Well

- **Safe food handling:** The topic of safe food handling was well addressed in the CFA training program. Participants are required to take a food handler training certification course over two sessions and write the certification exam. Also, the topic is covered in depth during session four. In addition, safe food handling and storage has been threaded throughout the entire course (e.g., discussed after each cooking demonstration and cooking together activity). Overall, the approach of introducing the topic early on in the training program and then reinforcing the information several times after cooking demonstrations, will likely lead to a greater uptake of this information from CFAs.
- **Nutrition:** for the purposes of this audit, the topic of nutrition included having an understanding of the components of food, what nutrients are needed for a healthy lifestyle, what types of nutrients are needed at different life stages and reading/interpreting food labels. The format of the CFA training is based on the Canada Food Guide (CFG), with sessions being organized around each food group. Participants have the opportunity to classify foods in different groups, learn about serving sizes and nutritional value, and practice reading food labels. Canada's Food Guide as a topic is introduced early on in the course (session two) and is reinforced throughout the entire training program after cooking demonstrations, in take home assignments and in the participant's classroom presentation.
- **Food preservation/storage:** The topic of food storage is covered within session four and is then reinforced throughout the training program (e.g., after cooking demonstrations and cooking together activities). Also, the CFA training program addresses storage of each of the different CFG food groups (e.g., how best to store grains, meat, etc.). In terms of food preservation, optional sessions 17 and 18 address different ways to preserve fruits and vegetables (e.g., canning, pickling and creating jams).
 - In addition to these methods, the CFA program may want to include vacuum packing and drying foods as additional ways to preserve foods.

Academic Knowledge Topics that May Need Further Attention

- **Built environment:** The topic of built environment and how it affects access to fresh, affordable foods was not addressed explicitly within the CFA training program. The topic of food availability and accessibility was covered in section four of the resource binder, but the focus of this section was to outline different places to shop for food (e.g., supermarket, farmers market, etc.) and not how geographic location (e.g., rural vs. urban), the socio-economic status of a community (e.g., high vs. low SES) and local infrastructure (e.g., transit, roads, etc.) can impact food selection. Given that the CFA program is provincial in scope and is offered in a variety of communities, this topic may be particularly relevant to expand on.
 - Recommendation to further expand the topic of built environment and how it affects access to fresh, affordable foods. When planning a community food

demonstration, CFAs should be trained to consider what kind of access the participants have to ingredients included in the presentation.

- **Cooking culturally appropriate meals:** The topic of cooking culturally appropriate meals was covered primarily in session 16 during the “food, culture and healthy eating” exercise. In small groups, participants developed presentations on different cultural groups, addressing language, religion, eating patterns, cooking styles, special ingredients, etc. Given that CFAs will likely be giving cooking presentations to a number of different cultural groups, they may require more than one session to adequately address cooking culturally appropriate meals.
 - Recommend threading this topic throughout the training program. For example, cooking demonstrations could feature recipes from different cultural groups and participants could discuss how the recipe could be modified to suit different cultural groups and/or religions.
 - Local groups are encouraged to become familiar with different cultural groups in their area and include optional education and training after certification.

- **Peak season for fruits and vegetables:** Throughout the CFA training program a variety of fruits and vegetables were presented in session six and also during cooking demonstrations. The topic of selecting fruits and vegetables based on when they are seasonally available was not included in the training materials. Although this topic is not critical to the development of food skills, it relates to the topics of budgeting, food preservation, built environment and possibly other topics. For example, eating seasonally is cost effective and may be easy or difficult to do depending on where you live (e.g. city centre vs. farming community).
 - Recommendation to include the topic of selecting fruits and vegetables based on when they are seasonally available in Ontario. Including this topic within the training course will enhance many of the existing topics already addressed.

IV. FOOD SKILLS SURVEY

1. Introduction

A key objective of the Community Food Advisor (CFA) program is to transfer “food skills” from trained Community Food Advisors (CFAs) to community participants. Food skills is defined as a collection of skills or techniques that are used to transform basic food ingredients into culturally appropriate meals suitable for consumption.

Food skills capacity (knowledge and skills) is thought to be enhanced by the 14 to 21 week CFA training program through in-class cooking demonstrations, presentations, small group cooking activities, and take home assignments. At completion of the training program (and subsequent community placements), CFAs are expected to have the skills and knowledge to deliver interactive cooking presentations and demonstrations to groups in the community.

In Spring 2010, the CFA program began an evaluation to assess the capacity and impact of the CFA program with respect to “food skills” development among trained CFAs. A key component of the evaluation was to assess the level of “food skills” currently possessed by active CFAs across the province. The survey was implemented with CFAs in order to get a one-time, ‘snapshot’ of current food skill capacities.

2. Methods

A 45-question, online survey was developed in summer 2010 to assess “food skills” among active, trained CFAs in Ontario (Appendix IV). Survey questions were informed by a scan of the scientific and gray literature, and the development of a conceptual model that elucidates “food skill” development. Many of the survey questions were informed by existing questionnaires that were used with community participants and not skilled, experienced trainers.

The following domains associated with food skill development were assessed within the survey: *food preparation skills, academic knowledge, cooking experience, household roles, built environment and food security.*

A draft of the survey was pilot tested by 5 active CFAs in September 2010. Survey questions were revised based on feedback received.

Participation in the survey was voluntary. Those who had completed the CFA training course and were actively volunteering as a CFA were eligible to participate. Participants were informed that their survey responses would be kept confidential and their identity would remain anonymous (i.e., no respondents would be identified within summary reports, or survey results).

The survey was built online using the web program Survey Monkey. CFA Coordinators (based in public health units) were emailed information about the survey (e.g., purpose, how it was developed) on October 13th, 2010. CFA Coordinators were asked to forward information and a link to the online survey to all CFAs in their region. Information and a link to the online survey were also distributed through the CFA listserv that many CFAs subscribe to. Participants were given two weeks to respond to the survey. A reminder email was sent to all CFA Coordinators and to the CFA listserv on October 20th, 2010 and the survey was closed on Oct. 27th, 2010. To increase participation, respondents had the choice to enter their name in to a draw for eight grocery store gift certificates valued at \$25.00.

To analyze survey data, frequencies, percentages, ratios and averages were used to describe responses from survey questions.

3. Results

Sample Characteristics

A total of 121 respondents completed all survey questions out of an estimated 350 active CFAs, representing a response rate of 35%. CFAs from across the province responded to the survey. Responses came from all 15 of the participating public health units (Table 1). Most responses were from Peel (19%), Durham (15%) and Ottawa health departments (12%). Approximately 96% of respondents were women and 86% were over the age of 45 years (Table 2). Half of the sample reported completing the CFA training program between 2007 and 2010 (Table 3) and nearly half had less than four years experience as a CFA (Table 4).

Food Preparation Skills

Eight survey questions assessed CFA's self-reported mechanical skills (i.e., action verbs associated with cooking such as slicing, chopping, frying, baking and boiling, etc.) (Table 5). Of all mechanical skills measured, knife skills were the most frequently reported (88% reported "always" peeling, chopping and slicing vegetables and fruits). Reported least frequently was using a pre-packaged mix to cook or bake (e.g., 87% reported "never" or "rarely" cooking a soup, stew or casserole using a pre-packaged mix and 77% reported "never" or "rarely" backing breads, muffins or cake using a pre-packaged mix).

Four survey questions assessed CFA's self-reported conceptual skills (i.e., the ability to visualize a final meal/menu, "a whole", based on all the ingredients, "units") (Table 6). CFAs reported a moderate frequency for all of the conceptual skill indicators. The most frequently reported was "how often do you plan meals using foods already in your home" (65% reported "always"). Least frequently reported was "how often do you create a meal without the use of a measuring device" (29% reported "always").

Two survey questions assessed CFA's self-reported planning skills (i.e., the ability to organize and coordinate a meal/menu so that meals are planned for the week, dishes are ready at the same time, other tasks, such as cleaning, are dovetailed into the cooking process). Responses varied when asked "how often do you plan meals for the week and make a corresponding grocery list" (25% "rarely", 39% "sometimes" and 29% "always"). The majority of CFAs reported that they "sometimes" plan and prepare a meal to be served all together within one hour.

Two survey questions assessed CFA's self-reported perceptual skills (i.e., the ability to use the senses - taste, sight, smell and sound to judge the quality of food). For example, perceptual skills are used to determine when fruit and vegetables have ripened, when food is properly cooked and when food has spoiled. For both measures, the majority reported "yes" that they are able to judge when a piece of meat/chicken/fish had been cooked properly (96%) and when bread/cakes/muffins had baked properly (98%).

Academic Knowledge

Four survey questions assessed knowledge with respect to safe food handling. Almost all respondents reported that they "always" wash hands before meal preparation (98%) and the majority reported refrigerating food promptly (84%). Responses varied when asked if a thermometer was routinely used to check temperature when cooking meat (50% "sometimes", 30% "always", 20% "never" and "rarely" combined). Also responses varied when asked if you "cover foods when they are cooling" (51% "sometimes", 26% "always", 23% "never" and "rarely" combined).

Five survey questions assessed knowledge with respect to nutrition (i.e., having an understanding of the components of food, what nutrients are needed for a healthy lifestyle, what types of nutrients are needed at different life stages, etc.). The majority of respondents rated that they "always" read food labels (71%) and more than half (57%) reported that they "always" select food based on information on food labels (41% reported they "sometimes"). When respondents were asked how often they adjust a recipe to make it healthier, nearly half reported "sometimes" while the other half reported "always" doing this. Just over half (53%) reported following Canada's Food Guide when planning meals, while 44% reported "sometimes" doing this.

Several other knowledge areas were assessed in the survey: cooking times, knowledge of when local fruits/vegetables are in 'peak season' and knowledge of food preservation/storage techniques.

Knowledge of cooking times was assessed by the following question, "how often do you prepare a meal that includes 2 or more items that need to be completed and served at the same time". More than half (58%) reported "always", while 39% reported "sometimes". Knowledge of fruit and vegetable peak season was also assessed. Three quarters (74%) responded "always", choosing fruits and vegetables that are in peak

season, while 26% reported “sometimes”. Knowledge of food preservation/storage techniques was assessed by the question, “how often do you freeze food items from raw to bagged in a home freezer”. Responses varied, with the majority (63%) responding “sometimes” and 25% reporting “always”.

Respondents were asked if they had ever canned fruits and vegetables in sealed glass jars. More than half (65%) reported they had done this before, and of those who had canned previously, the majority reported canning jams/jellies most frequently (94%), followed by sauces (67%) and pickles (66%). Few reported canning meat or fish (3%).

Other Food Skills Domains

Several other domains related to food skill development were assessed including: cooking experience, household roles, built environment and food security.

Cooking experience was measured generally by the question “how often did you prepare meals at home in the past week?” The number of meals prepared in the past week was used as a global estimate for overall cooking experience. More than half (59%) reported cooking daily, 34% most days and 7% few days. Respondents were also asked “what percentage of meals are you the primary cook in your home”. This measure could also be considered an indicator for overall cooking experience. The majority (83%) indicated they prepared between 75 to 100% of meals, 12% prepared between 50 to 75 percent of meals. Few, (< 5%) indicated they are the primary cook for less than 50% of meals.

In terms of family/household roles, the question reported previously regarding who in the household is the primary cook, can also be used as an indicator of family roles. If the respondent reports being the primary cook for most meals, it could be concluded that the individual has had considerable practical experience to develop food skills. In this sample, 83% of respondents indicated that they prepared 75 to 100% of meals. Another measure of household roles was the question “how often do you prepare foods according to your family’s specific food tastes”. Nearly two-thirds (63%) reported “always” preparing foods according to preferences and 34% reported they “sometimes” do.

Two survey questions were included as proxy measures for food security. Respondents were asked to report approximately how much money they spend per week on food in their household. Results varied, with just over a quarter of respondents (27%) reporting spending between \$75-100 per week (Table 14). Respondents were also asked to report the total number of members in their household. The average of each food expenditure range was taken (e.g., \$62.50 was the average of the \$50 to 75 range) and was divided

by the total number of household members for each respondent.⁷ Based on this calculation, nearly half of respondents (46%) reported spending between \$30 to \$45 per person/per week on food. Almost one quarter (23%) reported spending less than \$30 per person/per week.

Four survey questions addressed the built environment domain (i.e., environmental factors that affect access to fresh, affordable foods). Nearly three-quarters (74%) of respondents reported living in an urban setting, 26% in a rural setting. When asked how affordable healthy foods are in their community, almost half (52%) reported “somewhat affordable” and 41.5% responded “affordable”. When asked how accessible their community was to fresh, healthy foods, 64% responded it was “easy” to access these foods, 35% responded it was “somewhat easy”. Finally, when asked what mode of transportation respondents use to get to the grocery store, almost all (95%) indicated that they drove a vehicle.

4. Discussion

The food skills survey was one component of a broader evaluation with the aim of assessing the capacity and impact of the CFA program with respect to food skills development among trained CFAs. Survey design was informed by a scan of the scientific literature, the development of a conceptual model and a scan of existing surveys measuring food skills. While a number of surveys were identified assessing food skills among program participants, no existing surveys were found that measured food skills among lay health educators.

Based on existing surveys located, an adapted food skills survey was developed and piloted with several CFAs. It was implemented with CFAs in this project to get a one-time, ‘snapshot’ of current food skill capacities.⁸ Before distributing the survey widely, it is recommended that it be piloted extensively to determine its reliability and validity.

It was anticipated that CFAs would self-rate their food skills and knowledge highly across survey measures as they have a strong interest in cooking, have completed an intensive training course, and have experience teaching others to prepare meals. The survey results were anticipated to provide an opportunity to highlight gaps in knowledge and skills that could be addressed in subsequent CFA trainings and in-service workshops.

⁷ Note: For the <\$50 category, \$37.50 was set as the average and for the >\$200 category, \$225 was set as the average.

⁸ A short scan of the literature was conducted to identify studies that evaluated lay health educator training programs and interventions (with respect to satisfaction with training, knowledge and skill development, and self efficacy, etc.). Based on this brief scan, a separate pre/post survey was developed to assess the CFA training program itself.

Results from the survey were also cross referenced with the audit of the CFA training materials to further identify training gaps.

Response rate & characteristics of the sample

Given that an invitation to participate in the study was circulated through existing networks and participants were not contacted individually, a response rate of 35% could be considered quite high. Also, it is unclear how many active CFAs there are currently in Ontario. It has been estimated that there are 350 CFAs (based on the number of participants who have completed the training program) but it is possible that all are not actively volunteering with the program. Thus, the response rate reported (35%) is likely a conservative estimate.

The sample was quite homogenous in that the majority of respondents were women over the age of 45 years. Participants were asked to identify the town/city where they are currently involved in the CFA program. The location reported was linked to a corresponding health unit region using an online public health unit locator tool.⁹ There was representation from across the province; however, there was a higher response from CFAs linked to larger, urban health units.

Half of the sample reported completing the CFA training program in the past three years and had less than four years of experience. Few respondents (approximately 15%) completed the training in the past year.

Food Preparation Skills

In terms of mechanical skills (i.e., action verbs associated with cooking such as slicing, chopping, frying, baking and boiling, etc.), CFA's self-reported using these skills frequently. Most frequently reported were knife skills, preparing meat from raw or frozen state, cooking dishes (soups, stews, casseroles) and baking from scratch. Few reported using pre-packaged mixes to cook or bake. While the respondents reported using these skills frequently, it's unclear if these skills were enhanced by the CFA training program or the CFA's actual proficiency of these skills. For example, the CFA may chop vegetables daily, but have poor knife skills when compared to cooking school standards. Further research examining skill development pre and post CFA training would need to be carried out to determine if the training program led to a change in mechanical skills.

CFA's self-reported their "conceptual skills" (i.e., the ability to visualize a final meal or menu, to be able to see a 'whole' based on individual ingredients) as moderate. An example of this skill is preparing a meal based on existing ingredients on hand without the aid of a recipe or a measuring device. This requires the participant to visualize a

⁹ Public health locator tool is available here: <http://apps.publichealthontario.ca/PHULocator/>

final product based on individual ingredients that they may not have combined previously. The lowest reported frequency was “creating a meal without the use of a measuring device” (56% sometimes and 13% rarely). This could indicate that the CFAs require more training in estimating and visualizing portion amounts without the use of a measuring device. However, this could be reflective of the style of cooking promoted by the CFA program that places value on using measurement and exact ingredient amounts. Given that the CFA program follows Canada’s Food Guide which promotes thinking about meals in terms of serving sizes, using measurement devices routinely in cooking would be appropriate.

Responses were variable for questions assessing CFA’s self-reported planning skills (i.e., the ability to organize and coordinate a meal/menu so that meals are planned for the week, dishes are ready at the same time, other tasks, such as cleaning, are dovetailed into cooking the process). Anecdotal feedback from respondents suggested that questions in this section could be re-worked. For example, the question “how often do you plan meals for the week and make a corresponding grocery list” could be separated into two questions. Also, the question “how often do you plan and prepare a meal to be served together within 1 hour”, could be reworded so that it focuses on the ability to plan and coordinate preparing several dishes at once without a particular time limit. Also, additional questions could be added to assess dovetailing multiple tasks into the cooking process (e.g., washing dishes while a casserole bakes, etc.). Given the limitations with these questions, it’s difficult to draw conclusions on the CFA’s self-reported planning skills.

In terms of self-reported perceptual skills (i.e., having the ability to use the senses - taste, sight, smell, sound - to judge the quality of food), almost all CFA’s reported having these skills. Again, it is unclear if these skills were enhanced by the CFA training program or the CFA’s actual proficiency of these skills. Further research examining skill development pre and post CFA training would need to be carried out to determine if the training program led to a change in perceptual skills.

Academic Knowledge

The survey assessed knowledge in several areas that were considered important in the development of food skills – safe food handling, nutrition, cooking times, fruit and vegetable peak season, and food preservation and storage. Although knowledge was being assessed, survey questions were written such that respondents were asked to report the frequency of a behaviour that was related to a knowledge area. For example, instead of asking “what time of year are apples in season?” the survey question asked “how often do you choose fruits and vegetables that are in peak season”. If respondents selected “always”, this was considered a proxy for knowledge on that particular topic. This approach was taken so as to minimize the length of the survey. For example, to accurately assess knowledge of Canada’s Food Guide, at least 20 or more questions would need to have been added to span all of the information included

within the CFA training program. Also, the majority of respondents had completed the CFA training program more than two years before the survey was administered and it is likely that some of the information (i.e., facts, serving sizes, etc.) would have been forgotten. What was considered important was that CFAs were actively applying their knowledge in these respective areas. Questions where the majority of respondents rated performing a skill “rarely” or “never” could indicate the need to further emphasize this topic within the CFA training program or perhaps, offer an in-service on that particular topic.

Based on results across the knowledge domains assessed, it appears as though some topics within safe food handling may need to be further emphasized within the training program (i.e., use of meat thermometers to measure temperature and covering foods when cooling).¹⁰

With respect to knowledge about nutrition, responses suggest that knowledge within this area appears to be moderate. Further emphasis could be placed on the topics of adjusting recipes to make them healthier (approximately half reported “sometimes” doing this); the question did not address if the recipe needed to be adjusted (CFAs may be using “healthy recipes most often). Most of the CFA respondents (53%) reported always following Canada’s Food Guide in comparison to the 43.3% of the general population.¹¹

The question that assessed knowledge with respect to cooking times may need to be revised. Here, the question was meant to assess if respondents knew general cooking times for different ingredients/dishes (e.g., length of time and temperature needed to prepare a whole chicken, baked potato, etc.). As the question currently reads, it appears to be measuring a construct more related to the respondent’s ability to plan a meal (i.e., planning skills) than knowledge of cooking times for two or more items. Perhaps the question should be revised to: “how often do you prepare a meal where 2 or more items require different cooking times, but are served at the same time”.

Respondents appear to be knowledgeable with respect to fruit and vegetable peak season, food preservation/storage techniques (including canning).

¹⁰ The question that asked “how often do you cover foods while cooling” may need to be revised to include details at what temperature to cover foods (e.g., foods should be covered at 45 degrees F or below).

¹¹ Extrapolated from Statistics Canada Data for % of Canadians who eat 5 or more vegetable or fruit servings per day <http://www.statcan.gc.ca/pub/82-625-x/2011001/article/11461-eng.htm>

Other Food Skills Domains

Based on a review of the literature and development of a conceptual model, several other domains were identified as being related to food skill development (i.e., cooking experience, household roles, built environment and food security). Several survey questions were developed to assess each of these domains, however, each of these constructs are complex and could be assessed more comprehensively in separate surveys. For the purposes of this survey, the intent was to get a general measure of these constructs and their applicability to the CFAs (and possible comparison to other sectors in the future).

In terms of cooking experience and household roles, the majority of respondents (93%) reported cooking daily or most days in the past week and being the primary cook in their home (83% prepare 75–100% of meals). Also, nearly two-thirds report always preparing foods according to preferences. Overall, this likely indicates that respondents have a great deal of cooking experience in their own homes and have experience modifying meals based on tastes, all of which suggest high food skill competency. There was a small sub-group of respondents who reported cooking few days at home (7%), being the primary cook for less than 50% of meals (<5%) and “never” or “rarely” modifying meals based on food preferences. Further data analysis could be carried out to determine if there is a relationship between cooking experience and household roles with other food skill domains, particularly within the sub-group of respondents who report low experience.

Results indicate that nearly half of respondents (46%) report spending between \$30 to \$45 per person/per week on food, with approximately one quarter (23%) of the sample reported spending less than \$30 per person/per week. These results are difficult to interpret. Stats Canada does not report food expenditures in this way (they reports % of income spent on food and unfortunately questions on income were not included in this survey of CFAs). Canadian provinces, including Ontario, calculate the cost of a Nutritious Food Basket each year as an indicator of food affordability (especially for those relying on social assistance incomes). The cost of a nutritious food basket varies across the province. Generally the cost for an adult women is between \$32 and \$39 per week in comparison to the CFA average of \$42.23.¹² We can infer that the average CFA has adequate resources to meet their household food needs however caution must be take with this because the survey did not capture what was purchased in the CFA “food basket”. Further data analysis could be carried out to determine if there is a relationship between self-reported household food spending with other food skill domains measured.

¹² NRC files

The last domain assessed was built environment. The majority of respondents reported living in an urban setting and drove a vehicle to get to the grocery store. With respect to how affordable healthy foods are in their community, responses varied, but few (6.5%) reported that healthy foods are “not at all affordable” or “rarely affordable”, and less than 1% reported it was “rarely easy” to access these foods. These results suggest that CFA’s in the sample have relatively few barriers to accessing healthy foods in their communities. It would be interesting to compare these results with provincial data to determine if the CFA sample is representative. Also, further data analysis could be done to explore whether setting (urban or rural) was associated with perceived affordability and ease of accessing healthy foods.

5. Conclusion

The food skills survey allowed for the CFA program to capture a one-time ‘snapshot’ of current food skill capacities among trained CFAs in the province. CFAs report using mechanical skills frequently and have the ability to judge the texture and quality of foods (i.e., perceptual skills). CFAs report having moderate conceptual skills, indicating the need to further focus on the development of these skills during the CFA training program. It is difficult to ascertain CFA’s capacities with respect to planning skills, as results from these survey questions were varied. In terms of academic knowledge, survey results indicate the need to further emphasize the topics of safe food handling, nutrition (i.e., modifying recipes to make them healthier and cooking based on the Canada Food Guide).

Survey results, as well as feedback from respondents, have indicated the need for further refinement of the food skills survey (Appendix IV). Before distributing the survey widely, it is recommended that it be piloted extensively to determine its reliability and validity.

APPENDIX I: SUMMARY TABLE OF LITERATURE SCAN RESULTS

	Date	Keywords	Total hits	# Relevant Hits
1.	02/28/10	"food skills" (KW)	36	6
2.	03/07/10	"cooking skills" (KW)	129	12

Search #1				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
Wrieden, W.L., Anderson, A.S., Longbottom, P.J., Valentine, K., Stead, M., Caraher, M. et al. (2007). The impact of a community-based food skills intervention on cooking confidence, food preparation methods and dietary choices – an exploratory trial. <i>Public Health Nutrition</i> , 10(2), 203-211.	Not provided	- food skills intervention focused on: altering cooking confidence, food preparation methods and dietary choices	Copy of survey not provided (questions can be deduced from summary tables)	Aim of the current study was to evaluate the feasibility of undertaking a food skills intervention (CookWell) in areas of social deprivation in Scotland
Thonney, P.F. & Bisogni, C.A. 2006. Cooking up fun! A youth development strategy that promotes independent food skills. <i>Journal of Nutrition Education Behaviour</i> , 38, 321-323.	Not provided	Cooking experiences to help young people learn about ingredients (knowledge) and how to make healthful choices in food preparation (skill) Sessions increase opportunity for mastery and provide opportunity to practice skills and gain confidence	Copy of survey tool not provided	Skill-building activities focus on reading recipes and food labels, kitchen and food safety, ingredient science, and nutritional choices
McLaughlin, C., Tarasuk, V. & Kreiger, N. (2003). An	Not provided	Food skills related to preparing food from	Copy of survey tool not provided	A secondary analysis of data from a study of nutritional

Search #1				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
examination of at-home food preparation activity among low-income, food-insecure women. <i>J Am Diet Assoc.</i> 103, 1506-1512.		scratch, consider an 'education' activity skilled food selection and preparation		vulnerability among 153 women in families seeking charitable food assistance was undertaken to estimate the extent and nutritional significance of at-home food preparation activity for these women. Food skills alone are unlikely to protect very poor families from food insecurity
Porter, J., Capra, S. & Watson, G. (2000). An individualized food-skills programme: Development, implementation and evaluation. <i>Australian Occupational Therapy Journal</i> , 47, 51 – 61.	Food skills, or the variety of skills included in the performing of tasks associated with the selection, purchase, preparation and consumption of food, are important components of activities of daily living	Model of self-efficacy, described by Bandura (1986), formed the basis of the learning approach used in this program. Practice, and successful outcomes across a range of contexts, are required to facilitate enhanced self-efficacy and task confidence. One consequence of this approach is that students are able to repeat and transfer knowledge and skills they have learned to other contexts.	Functional Needs Assessment – Nutritional Management Program (FNA-NMP)	Describes the development, implementation and evaluation of an individualized food-skills intervention program. This assessment method was chosen after a review of measures suitable for assessing the food skills of people with a mental illness (Porter, Watson & Capra, 1998). Food-skills deficits were identified in a group of consumers with chronic mental illness living in hospital-based care.

Search #1				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
		Components of the program included: dining skills, kitchen skills, food preparation, money management, shopping and purchasing skills, social etiquette		
Porter, J., Capra, S. & Watson, G. (1999). Food skills of people with a chronic mental illness: The need for intervention. <i>British Journal of Occupational Therapy</i> , 62(9), 399-404.	Food skills were defined as the variety of skills included in performing tasks associated with the selection, purchase, preparation and consumption of food.	<i>See above</i>	<i>See above</i>	
Devine, C.M., Wolfe, W.S., Frongillo, E.A. & Bisogni, C.A. (1999). Life-course events and experiences: Association with fruit and vegetable consumption in 3 ethnic groups. <i>Journal of the American Dietetic Association</i> , 99(3), 309-314.	"Food skills" definition not provided. "Food choice" definition provided in which skills is one component.	"Food choice trajectories" is defined as "a person's persistent thoughts, feelings, strategies, and actions as she/he approached food choice" through life, may be formed as people are initiated into family or ethnic food traditions Following factors are associated with food choice: independent life events (e.g. transitions in	Yes, 4 items (0 = no and 1=yes) <ul style="list-style-type: none"> - consider self a good cook - Think vegetables are easy to prepare - Fresh vegetables do not often spoil before they can be used - Have enough time to prepare vegetables 	Study examined how life-course experiences and events are associated with fruit and vegetable consumption in 3 ethnic groups "Food skill" measure has been tested – valid, can be administered by phone Conceptual model developed in previous research in the same population (Devine, Connors, Bisogni, Sobal, 1998) There are differences in fruit

Search #1				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
		residence), family roles, health problems (e.g. diagnosis of chronic disease), life stage, lifetime food experiences (e.g. developing food preparation skills), developing a preference for specific foods, and gardening.		and veg consumption by ethnic group, therefore, necessary to understand the determinants of food choice in different subcultures to design effective intervention strategies Results found that “food skills” was positively associate with fruit and vegetable consumption among Hispanic respondents (not African American or Caucasian)

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
<p>Winkler, E. & Turrell, G. (2009). Confidence to cook vegetables and the buying habits of Australian households. <i>Journal of the American Dietetic Association</i>, 109, 1759-1768.</p>	<p>- Domestic cooking skills are complex and have no universal definition or gold-standard measure. Perceptions vary as to what constitutes cooking and skilled cooking, and public perceptions often do not adhere to definitions of researchers or culinary professionals.</p> <p>- <i>“food preparation”</i>: ‘preparing’ food means anything you might do to make the food suitable to eat</p>	<p>Confidence to perform an action theoretically increases the likelihood of doing so.</p> <p>Examined confidence to cook rather than quantifying skill levels by self-report, which is unlikely to accurately capture actual skill levels, or by observation, which is an intensive approach.</p>	<p>Respondents indicated how confident they felt to prepare vegetables, and to use cooking techniques, in categories ranging from not at all confident_1 to very confident_6. The measure included 21 vegetable items and 10 techniques examined in the Health and Lifestyles Survey (4).</p> <p>Item scores were summed, forming two scales, which could range from 21 to 126 and 10 to 60, respectively. These scales were skewed toward high levels of confidence (medians and ranges were 117 [21 to 126] and 53 [14 to 60], respectively). Both scales had acceptable internal consistency (Cronbach’s __.94, and</p>	<p>- Australia, used a validated questionnaire to assess household vegetable purchasing habits and the confidence to cook of the person who most often prepares food for these households.</p> <p>- relationships between cooking skills, dietary behaviors, and health are supported by very few population-based studies (4-10).</p> <p>- Cooking skills interventions have successfully altered dietary behaviors (11-14). It is not known if dietary improvement is sustained in absence of long-term follow-up, nor if dietary improvement occurred as a result of cooking skills, or the more comprehensive education provided by these programs.</p>

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
			.83, respectively).	
<p>Michaud, P., Condrasky, M. & Griffin, S.F. (2007). Review and application of current literature related to culinary programs for nutrition educators. <i>Topics in Clinical Nutrition</i>, 22(4), 336-348.</p>	<p>Minimal amount of scientifically or theoretically based research about domestic cooking skills or behaviors.</p> <p>Cooking skills have yet to be methodically defined for practical and research purposes. In fact, they are generally assumed to encompass a collection of straightforward techniques used in meal preparation.</p> <p>Cooking skills and behavior are better understood as a collection of mental and physical skills combined with hands-on experience.</p>	<p>Mechanical cooking skills include many of the action verbs associated with cooking: poaching, slicing, frying, and microwaving.</p> <p>Perceptual skills are used in cooking to judge when vegetables have been cooked appropriately and in conceptualizing how to adapt recipes to suit family preferences.</p> <p>Planning skills including timing and organization so that dishes are ready at the same time and other tasks (i.e., cleaning) can dovetail into the process.</p> <p>Academic knowledge of food safety, nutrition, and how to combine flavors and textures are also elements of cooking skills.</p> <p>Attitudes towards at-home cooking</p> <p>Cooking knowledge</p>	<p>No measurement tool</p>	<p>Review provides evidence for inclusion of cooking activities within adult nutrition education programs.</p>

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
		Cooking behaviour Cooking self-efficacy		
Beets, M.W., Swanger, K., Wilcox, D.R. & Cardinal, B.J. (2007). Using hands-on demonstrations to promote cooking behaviors with young adolescents: The culinary camp summer cooking program. <i>J Nutr Educ Behav.</i> , 39, 288-289.	Culinary skills (eg, knife skills, food preparation, and safe food handling)	- (cooking behaviors) number of times respondents prepared meals at home during the past 7 days - (psychosocial constructs) attitudes toward cooking, self-efficacy, behavioral expectancies, knowledge, perceived cooking ability, and perceptions that parents worry about cooking	- used a previously designed survey for cooking behaviors and psychosocial constructs theoretically related to preparing food	Culinary Camp program's main purpose was to increase the number of times young adolescents prepared meals at home and to improve their attitudes, self-efficacy, behavioral expectancies, knowledge, perceived cooking ability, and perceptions of parents' worry regarding cooking. Direct involvement in preparing food, in comparison to demonstration-based instruction, results in a greater improvement in cooking behaviors, attitudes, and beliefs (5).
Larson, N.I., Perry, C.L., Story, M. & Neumark-Sztainer, D. (2006). Food preparation by young adults is associated with better diet quality. <i>J</i>	"Food preparation" definition not provided.	Food Preparation and Purchasing Behaviors Degree of Adequacy Perceived in Skill and Resources for Food Preparation	Food preparation measured by asking the frequency of five behaviors over the past 12 months: (a) bought fresh vegetables; (b) wrote a grocery list; (c) prepared a green salad;	Food-preparation behaviors were not performed by the majority of young adults even weekly. Sex, race, and living situation (campus housing) were significantly related to less frequent food preparation.

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
<i>Am Diet Assoc., 106, 2001 – 2007.</i>		<p>Dietary Intake and Eating Behaviors</p> <p>Demographics</p> <p>Weight Status</p>	<p>(d) prepared a dinner with chicken, fish, or vegetables; and (e) prepared an entire dinner for two or more people. Response choices were: were “never,” “one to two times,” “four to five times,” “monthly,” “weekly,” or “daily.”</p> <p>Measured food-preparation behaviours, cooking skills, resources for preparing food and their association with YAs</p>	<p>Lower perceived adequacy of skills and resources for food preparation was related to reported race and student status (part-time or not in school).</p> <p>Young adults who reported frequent food preparation reported less frequent fast-food use and were more likely to meet dietary objectives for fat ($P_{0.001}$), calcium ($P_{0.001}$), fruit ($P_{0.001}$), vegetable ($P_{0.001}$), and whole-grain ($P_{0.003}$) consumption.</p>
Hughes, G., Bennett, K.M. & Hetherington, M.M. (2004). Old and alone: barriers to healthy eating in older men living on their own. <i>Appetite</i> , 43, 269-276.	Not provided	- cooking skills one construct measured among others (e.g. energy and nutrient intake, fruit and veg intake, etc.)	Cooking skills measured by asking participants if they cooked, if someone else cooked for them, if they heated food and how they described their cooking skills. This question was subsequently coded as 1 ‘no, poor or basic’, 2 ‘adequate’ or 3 ‘good’.	<p>The aim of the present study was to explore food choice and energy intake in older men living alone using both quantitative and qualitative methods.</p> <p>39 older men were interviewed and completed questionnaires on health, food choice, dietary patterns and appetite.</p>

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
			Coding was based on the participants' descriptions, using their exact words. Therefore 'no, poor or basic skills' were stated as such by the participants.	
Stead, M., Caraher, M., Wrieden, W., Longbottom, P., Valentine, K. & Anderson, A. (2004). Confident, fearful and hopeless cooks: findings from the development of a food-skills initiative. <i>British Food Journal</i> , 106(4), 274-287.	<p>Cooking skills: taking raw ingredients and turning them into complete culturally appropriate dishes.</p> <p>However, the continuing emphasis on cooking as a skill that should produce food that is aesthetically pleasing, tasty and acceptable to different members of the household/family.</p> <p>Cooking skills are being adapted and changed in response to external variables such as time demands, commercial developments, food availability and technology.</p>	<p>Budgeting, buying, planning and meal assembly skills</p> <p>Experiences of food shopping and preparation, their food preferences, and their feelings about and experiences of cooking specific types of cooking method (eg. boiling, poaching, steaming) and specific dishes</p>	Qualitative research – not survey	<p>This article describes the exploratory qualitative research conducted to inform the content of an intervention designed to address low food skills base among low income communities.</p> <p>The intervention, called Cookwell, is a community-based, food skills initiative, consisting of a series of practical cookery classes run in a community setting.</p> <p>There is some evidence that cooking classes or training programs which are multifaceted in their approach, and which operate within a health-promoting settings approach, may influence</p>

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
				behaviour in the short term
Nijmeijer, M., Worsley, A. & Astill, B. (2004). An exploration of the relationships between food lifestyle and vegetable consumption. <i>British Food Journal</i> , 106(7), 520-533.	Cooking Methods: deal with the ways purchased products are transformed by consumers into meals, the planning and spontaneity involved, the time people want to spend in food preparation, who does the cooking, etc.	<p>“Cooking Methods” construct broken down into:</p> <ul style="list-style-type: none"> - looking for new ways - convenience - woman’s task - planning - interest in cooking 	<p>Questionnaire based on the food-related lifestyle model.</p> <p>Measured shopping scripts, meal preparation scripts, higher order attributes, purchasing motives and usage situation</p>	A short questionnaire was completed by 276 South Australian consumers, which examined postulated relationships between personal values, food lifestyle, demographics and their usual consumption of 24 vegetables
Short, F. (2003). Domestic cooking practices and cooking skills: findings from an English study. <i>Food Service Technology</i> , 3, 177-185.	<p>Lack of clarity or consistency in the use of concepts and terms such as “cooking skills”, “cook” and “preprepared”</p> <p>“Cooking skills” is frequently used to refer to (often culturally specific) practical cooking techniques such as ‘preparing vegetables’, ‘microwaving’, ‘cooking rice’, ‘stir frying’, etc.</p>	<p>- cooking ability, confidence and cooking practices have a complex relationship</p> <p>- cooking skills can be seen as either task-centred or as a person-centred and contextual and as consisting of perceptual, conceptual and organizational skills as well as practical, mechanical skills and academic knowledge.</p> <p>Approaches to cooking highly individual. Also, an intricate and share</p>	- qualitative, interpretative approach (no survey)	<p>Qualitative study of 30 domestic cooks living in England. Aimed to examine the nature of cooking skills and cooking practices and the beliefs, values and opinions of domestic cooks.</p> <p>Study aimed to establish a theoretical and empirically based “way of thinking” about cooking and cooking skills that could be used to develop current academic and popular discourses about cooking and inform policy makers and researchers</p> <p>No simple, clear cut</p>

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
		'domestic cooking culture'.		relationship between the domestic cooks' skills and knowledge and their domestic cooking practices and food choices (frequency of cooking, techniques applied, use of preprepared and fresh, raw foods, etc.)
Anderson, A.S., Bell, A., Adamson, A. & Moynihan, P. (2002). A questionnaire assessment of nutrition knowledge – validity and reliability issues. <i>Public Health Nutrition</i> , 5(3), 487-503.	“Food skills are inevitably a practical domain (although it is recognized that a basic level of knowledge about ingredients, preparation methods and cooking times is also required).”	<p>Three domains were assessed: Knowledge of Applied Nutrition (KN), Knowledge of Food Preparation (KP) and Perceived Confidence in Cooking Skills (PC)</p> <p>Knowledge of Applied Nutrition items were designed to assess the relative nutrition content (described as 'healthy option') of familiar foods in everyday meal occasions.</p> <p>Knowledge of Food Preparation items were designed to assess knowledge of basic food preparation and cooking skills required for preparing familiar dishes.</p>	Survey not provided	<p>Study describes an evaluation of validity and reliability measures in a questionnaire designed to assess knowledge of applied nutrition in children participating in an after-school care dietary intervention program being undertaken in an area of high social disadvantage.</p> <p>The test meets basic psychometric criteria for reliability and validity and forms a suitable instrument for measuring changes associated with intervention work aimed at improving food and dietary knowledge.</p>

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
		Perceived Confidence in Cooking Skills items were designed to assess perceived personal ability to prepare common meal items.		
Caraher, M., Dixon, P., Lang, T. & Carr-Hill, R. (1999). The state of cooking in England: the relationship of cooking skills to food choice. <i>British Food Journal</i> , 10(8), 590-609.	<p>Although cooking skills and their application tend to have been viewed as a matter of individual behavioural or lifestyle choice, the acquiring of such skills in fact relies on structural factors such as cultural norms and educational policy.</p> <p>Cooking skills in themselves do not guarantee the preparation of meals from basic ingredients. Many people lack the ideas, knowledge and menu-planning skills necessary to organize a meal. Cooking skills are only one component of bringing together a meal (Bosely,1999)</p>	<ul style="list-style-type: none"> - How often do people cook - confidence in ability to cook (generally & with particular techniques) - confidence with groups of food 	Not provided	<p>Paper explores whether the population in general and men in particular do not possess the skills or the confidence to cook. It draws on quantitative data from a large sample of the English population, to explore how often people cook and the extent of their confidence and application of specific cooking techniques.</p> <p>The impact of cooking skills and cooking facilities as barriers to food choice are explored and finally the level of reported support for the teaching of cooking skills are reported.</p> <p>The direction of influence is unclear, the current data suggest that the acquisition</p>

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
				of cooking skills is structurally determined, primarily along gender lines but also by social class and income. It is also possible that the absence of cooking skills may contribute to structural differences in health status, although we would caution against assuming this link to be the prime influence on eating habits, this primarily being the direct influence of poverty.
Stitt, S. (1996). An international perspective on food and cooking skills in education. <i>British Food Journal</i> , 98(10), 27-34.	Food skills could concentrate on generating and encouraging proper attitudes to healthy and nutritious eating and fostering an awareness of “what food is”	Cooking is more ‘dedomesticated’ “Optionalization” of food skills in the school curriculum (no longer mandatory)	Not a survey	A conceptual paper which generates important research questions for the study of food and nutrition and, in particular, for households on low incomes. Snapshot of food skills curriculum in different countries Looks at the validity of these concerns in Britain but also calls on material gathered in consultations with health and education professionals in other countries.

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
				Aims to strengthen the argument for prioritizing food cookery skills in schools as one of the most effective health promotion strategies in protecting the means which families and individuals have to determine what they eat, rather than forfeiting this to the mass processed food industries.
Barton, K.L., Anderson, A.S. & Wrieden, W.L. (2004). <i>Validity and reliability of a short questionnaire for assessing impact of cooking skills interventions</i> . Centre for Public Health Nutrition Research, University of Dundee. Retrieved March 25, 2010 from: http://www.foodbase.org.uk	Not provided	Food knowledge, attitude and behaviour (food choice) measured changes in: <ul style="list-style-type: none"> • fruit and vegetable consumption • frequency of using basic ingredients for preparation of meals • confidence in using a recipe • buying less convenience foods 	Not provided – Will try to retrieve	The CookWell programme ¹ (commissioned by the Food Standards Agency) was developed by the University of Dundee with the objective to develop, implement and evaluate a transferable, community-based, food skills (cookery) program aimed at increasing consumption of starchy foods, fish, vegetables and fruits, and decreasing consumption of fat in adults living in areas of deprivation. An extensive evaluation was undertaken to examine changes in food choice,

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
		<ul style="list-style-type: none"> • increased likelihood of tasting and experimenting with new foods • an increased awareness of food preparation and production 		nutrient intake and a wider range of factors which influence food choice (2). These tools employed both quantitative and qualitative research methods and provide a detailed account on the process, nature and extent of change in food habits that might occur in association with cooking skills interventions.
<p>Ternier, S. (2010). Understanding and measuring cooking skills and knowledge as factors influencing convenience food purchases and consumption. <i>Studies by undergraduate researchers at Guelph</i>, 3(2). Available from: http://www.criticalimprov.com/index.php/surg/article/viewArticle/1122/1668</p>	<p>“Cooking skills can be divided into two different categories: domestic cooking skills and professional cooking skills [15]. These can be seen as two sets of skills that have similar and different aspects. Both share the technical skills of chopping, boiling, etc. but the situations in which they prepare food as well as their kitchen equipment are different. A professional chef would have the knowledge and skills of preparing consistent food quality and preparing several dishes simultaneously; while a domestic cook would have the knowledge and skills of creating dishes from leftovers, multi-tasking with</p>	<p>Technical, planning, perceptual, conceptual, basic food knowledge and other cooking-related skills.</p>	<p>Provides suggestions for questions that a cooking skill questionnaire should include:</p> <p>e.g., “I make meals that require more than three ingredients.”</p> <p>“I am able to visualize the meal I am going to make and how the food items will come together on the plate.”</p>	<p>A manuscript developed by an undergraduate researcher from University of Guelph.</p> <p>Paper provides results of a literature review examining how cooking skills are acquired and the factors that affect acquisition (e.g. gender, age, income, social/educational class, attitude and social environment). A non-traditional definition of cooking competence was analyzed which strays from the traditional ‘task centered’ approach and instead encompasses a</p>

Search #2				
Citation	Definition of Food Skills	Key Concepts	Food Skills Measurement tool?	Comments
	children or house chores, and preparing food to meet dietary requirements and tastes of the family.”			comprehensive set of skills used in domestic cooking. A cooking competence questionnaire was created to include this new definition.

APPENDIX II: RESULTS OF CFA PROGRAM MATERIAL AUDIT

(Note: “S” refers to session and “RB” refers to resource binder.)

Food Preparation Skills: A cluster of techniques which together, are required to transform basic ingredients into a meal. Can be thought of as “how” food is selected and prepared.		
Concept	Description	How it is addressed in CFA Training Program
Mechanical Skills	Refers to the action verbs associated with cooking (e.g., slicing, chopping, frying, boiling, poaching, canning, etc.).	<p>S4.7 “Safe Food Handling at Home” – practice hand washing techniques using Glo Germ Kit, practice sanitizing surfaces.</p> <p>S5.5 “Cooking Together: Healthy Snacks/Light Meals” – participants practice preparing snacks and light meals (assuming this involves the use of a knife and stove).</p> <p>S6.5 “Cooking Together – Grains” – participants practice preparing grain based dishes (assuming this involves the use of knife and stove).</p> <p>S7.4 “Cooking Together – Milk/Meat & Alternatives” – participants practice preparing milk/meat & alternatives dishes (assuming this involves the use of knife, stove, etc.).</p> <p>S.8.9 “Cooking Together Activity – modify potato salad” – participants prepare four versions of a potato salad recipe. Assume participants will have practice chopping, boiling and combining ingredients.</p> <p>S.9.8 “Convenience Food Demonstration” – present a convenience food demonstration. Demonstrate basic cooking skills, techniques, tools and equipment (note: participants just observe).</p> <p>S10.6 “Cooking on a Budget Food Demonstration” – present a low cost food demonstration to the group (spaghetti sauce or chili). Demonstrate basic cooking skills, techniques, tools and equipment.</p> <p>S11.5 “Fun food for kids demonstration” – present a fun food for kids demonstration (e.g. veggie fries, veggie rice roll, lunch box couscous). Demonstrate basic cooking skills, techniques, tools and equipment.</p> <p>S12.4 “Cooking for One Demonstration” – present a low cost food demonstration to the group (tomato ham pasta dinner, egg in a cloud, turkey meatloaves). Demonstrate basic cooking skills, techniques, tools and</p>

Food Preparation Skills: A cluster of techniques which together, are required to transform basic ingredients into a meal. Can be thought of as “how” food is selected and prepared.		
Concept	Description	How it is addressed in CFA Training Program
		<p>equipment.</p> <p>16.6 “Cooking Together – Multicultural Recipes” – in small groups, prepare five multicultural recipes (China, India, Mexico, Portugal, Somalia, Vietnam, Thailand, etc.). Basic cooking skills, techniques, tools and equipment are used.</p>
Conceptual Skills	<p>Ability to visualize a final meal (“a whole”) based on all the ingredients (“units”). Involves creativity and flexibility.</p> <p>(e.g., new ideas for menus, ideas for combining different basic ingredients and using leftovers in new ways, adapting recipes to suite tastes, determining which recipes to use with which groups in the community).</p>	<p>Classroom Presentation – planning and delivery of a 20-min in-class presentation and food demonstration. Must complete demonstration within this time frame (note: possibility some conceptual skills developed if participants able to plan their own meal without use of recipe).</p> <p>S5.3 “Warm up: Favourite Meal Ideas” – participants to compile list of their favourite recipes, no fuss meals and meals they would like to try under the new recipe section.</p> <p>S5.5 “Cooking Together: Healthy Snacks/Light Meals” – after preparing a snack, participants discuss which community group they would present this recipe to.</p> <p>S5.7 “Menu Planning Case Study” – case studies assigned, participants are asked to prepare a one day menu for the person in the case study. Menus need to be based on CFG and need to be appropriate based on person’s age and activity level. Participants must use creativity and be able to visualize an entire menu and to adapt it to a person in their case study.</p> <p>S5.8 “Your Menu Plan” – Participants design a one week menu for themselves and their family using the menu plan activity sheet and the balanced menu checklist. Requires participants to design a whole week of meals that are balanced and appealing to their family.</p> <p>S6.5 “Cooking Together – Grains” – participants practice preparing grain based dishes. After preparing the dish, participants discuss how it could fit into a menu plan and which community group might they prepare this recipe for.</p> <p>S6.8 “Vegetables and Fruit 26 Ways Activity” – participants asked to brainstorm different ideas for eating vegetables and/or fruit where each idea starts with a different letter of the alphabet.</p>

Food Preparation Skills: A cluster of techniques which together, are required to transform basic ingredients into a meal. Can be thought of as “how” food is selected and prepared.

Concept	Description	How it is addressed in CFA Training Program
		<p>S7.4 “Cooking Together – Milk/Meat & Alternatives” – participants practice preparing milk/meat & alternatives dishes (assuming this involves the use of knife, stove, etc.). After preparing the dish, participants discuss how it could fit into a menu plan and which community group might they prepare this recipe for.</p> <p>S7. “Milk and Alternatives and Meat and Alternatives Planning a Meatless Meal Cooking Class” – participants asked to plan a cooking class focusing on meatless meals for several small groups (e.g., seniors, children, etc.). When planning the class, must consider taste preferences, cooking skills, knowledge, cooking equipment and other resources.</p> <p>S8.8 “High Fibre Meal Planning” – working in partners, asked to plan a high fibre meal that has at least 8 to 10 grams of fibre while including at least 3 of the 4 food groups in CFG. Participants need to think about fibre content contained within individual ingredients and how they can combine ingredients to create an overall meal that contains 8-10 g of fibre.</p> <p>S8.9 “Potato Salad Makeover” – brainstorm ways to subtract fat and add fibre to a potato salad recipe. Participants can brainstorm additional healthy ingredients to add or other ways to add flavor while reducing fat.</p> <p>S8. “Recipe Makeover – Activity Sheet #1 & 2” – take home activity where participants recommend ways for subtracting fat and adding fibre to two recipes (mac & cheese and carrot cake).</p> <p>S9.4 “Organize the kitchen” – group brainstorms a list of easy to prepare, basic ingredients and foods needed to keep their cupboards, refrigerator and freezer stocked. Review handout “basic pantry list” and participants asked to suggest quick and easy meals that could be prepared from the ingredients.</p> <p>S9 “Test Questions” – participants asked to think of 5 ways to use up leftovers, 10 examples of foods that would be important to have in a basic pantry and examples of ‘quick and easy’ meals for breakfast, lunch and supper.</p> <p>S9. “Quick and Easy Menu Planning” – participants fill in a chart with missing meals and snacks. Are asked to use leftovers, healthy convenience foods and quick and easy recipes.</p>

Food Preparation Skills: A cluster of techniques which together, are required to transform basic ingredients into a meal. Can be thought of as “how” food is selected and prepared.

Concept	Description	How it is addressed in CFA Training Program
		<p>S10.4 “Menu planning on a budget” – Ask participants to share ideas for using leftovers for foods within each food group in CFG.</p> <p>S10.6 “Cooking on a Budget Food Demonstration” – present a low cost food demonstration to the group (spaghetti sauce or chili). Discuss how all purpose quick spaghetti sauce can be used for a variety of meals, prepared as a batch and can add leftovers to the sauce.</p> <p>S10 “Test Questions” – participants asked to provide examples of low cost meals for breakfast, lunch and supper and tips for using leftovers in each of CFG food groups. Also asked to imagine giving a cooking demo to young, single mothers (what recipes would they choose, etc.).</p> <p>S11.4 “Healthy eating for children” – discuss key concepts to help children eat well. Refer to CFG’s “Eating Well with CFG”.</p> <p>S11.7 “Better Breakfasts Activity” – participants asked to rate 6 different breakfast meals. Asked to think of ways to improve the breakfasts so that they have a higher ‘star’ rating.</p> <p>S11.5 “Fun food for kids demonstration” – present a fun food for kids demonstration (e.g. veggie fries, veggie rice roll, lunch box couscous). Discuss ways to get kids involved in the preparation of this recipe and overall strategies for helping children to accept new foods.</p> <p>S11.8 “Cool Lunch Guide” – planning resource where kids can choose ingredients to make lunches for the week. Kids pick one food from each column to create interesting combinations of food.</p> <p>S11. “Healthy Meals for Kids Case Studies” – participants asked to brainstorm healthy and safe meals/snacks for kids for different audiences (e.g., parents of children, staff and volunteers of a breakfast program, etc.).</p> <p>S12.4 “Cooking for One Demonstration” – present a low cost food demonstration to the group (tomato ham pasta dinner, egg in a cloud, turkey meatloaves). Discuss using and storing leftovers.</p>

Food Preparation Skills: A cluster of techniques which together, are required to transform basic ingredients into a meal. Can be thought of as “how” food is selected and prepared.		
Concept	Description	How it is addressed in CFA Training Program
		<p>S12.7 “Ready-made meals in a flash activity” – participants asked to add other food groups to a ready-made food item to make the meal well balanced following CFG.</p> <p>S12.8 “Effective Presentations: Working with Seniors” – participants discuss how they would approach a group of seniors living in the community (i.e., types of recipes and foods, topics they would focus on, etc.).</p> <p>16.6 “Cooking Together – Multicultural Recipes” – in small groups, prepare five multicultural recipes (China, India, Mexico, Portugal, Somalia, Vietnam, Thailand, etc.). Discuss where dish could fit into a meal plan and which community group might they prepare the recipe for.</p>
Planning Skills	Ability to organize and coordinate a meal so that dishes are ready at the same time and other tasks are dovetailed into the process (e.g., cleaning the kitchen while preparing the meal).	<p>Classroom Presentation – planning and delivery of a 20-min in-class presentation and food demonstration. Must complete demonstration within this time frame (note: mechanical skills not evaluated).</p> <p>S3.4 “Effective Demonstrations” – Use of the Program Planning Cycle to plan presentations and demonstrations.</p> <p>S3.7 “Effective Presentations” – Participants work in small groups and select a food-related item. The group must prepare a one minute talk about the object. Requires the group to plan the presentation into three parts.</p> <p>S5.7 “Menu Planning Case Study” – case studies assigned, participants are asked to prepare a one day menu for the person in the case study. Menus need to be based on CFG and need to be appropriate based on person’s age and activity level.</p> <p>S5.8 “Your Menu Plan” – Participants design a one week menu for themselves and their family using the menu plan activity sheet and the balanced menu checklist.</p> <p>S5.9 “Making a Shopping List and Sticking to it” – discuss the principles of making a shopping list, reinforced by using the Master Shopping List worksheet. Shopping list developed based on one week menu plan from previous exercise.</p> <p>S7. “Milk and Alternatives and Meat and Alternatives Planning a Meatless Meal Cooking Class” – participants asked to plan a cooking class focusing on meatless meals for several small groups (e.g., seniors, children, etc.).</p>

Food Preparation Skills: A cluster of techniques which together, are required to transform basic ingredients into a meal. Can be thought of as “how” food is selected and prepared.

Concept	Description	How it is addressed in CFA Training Program
		<p>Asked to find recipes that would be appropriate for various groups. Requires planning skills to think through the class (e.g., length of time to prepare the dish, skill level of participants, etc.).</p> <p>S8.8 “High Fibre Meal Planning” – working in partners, asked to plan a high fibre meal that has at least 8 to 10 grams of fibre while including at least 3 of the 4 food groups in CFG.</p> <p>S9.3 “Warm up: Are you winning at meal preparation” – a short quiz to assess how well participants manage time in the kitchen (e.g., planning meals in advance, use leftovers as the basis for another meal, etc.). Quiz helps to build awareness of current planning skills.</p> <p>S10.8 “Smart Shopping” – review the benefits of making a shopping list.</p>
Perceptual Skills	Ability to use senses (taste, sight, smell, sound) to judge time and texture of food (e.g. when produce is ripe, when food is properly cooked, when food has spoiled).	<p>S5.5 “Cooking Together: Healthy Snacks/Light Meals” – Preparation of 5 snacks. Participants are encouraged to taste the recipes, complete the sensory evaluation form and to evaluate the recipes. Recipes evaluated on appearance, texture, chewiness, flavor and overall.</p> <p>S6.3 “Warm up: Grain Identification”- participants use smell and touch to identify various grains.</p> <p>S6.5 “Cooking Together – Grains” – participants practice preparing grain based dishes. Have the opportunity to taste the recipes and evaluate using the sensory evaluation form.</p> <p>S7.4 “Cooking Together – Milk/Meat & Alternatives - participants practice preparing milk/meat & alternatives dishes. Have the opportunity to taste the recipes and evaluate using the sensory evaluation form.</p> <p>S7. “Eggs Activity Sheet” – discuss the signs of a fresh egg and what you should look for when buying.</p> <p>S7. “Meat and Poultry Activity Sheet” – discuss ways to check for ‘doneness’ of meat and poultry.</p> <p>S7. “Fish Activity Sheet” – discuss what to look for when purchasing fresh and frozen fish.</p>

Food Preparation Skills: A cluster of techniques which together, are required to transform basic ingredients into a meal. Can be thought of as “how” food is selected and prepared.

Concept	Description	How it is addressed in CFA Training Program
		<p>S.8.9 “Cooking Together Activity – modify potato salad” – participants prepare four versions of a potato salad recipe. Use sensory evaluation form in the workbook afterwards to evaluate the recipes.</p> <p>16.6 “Cooking Together – Multicultural Recipes” – in small groups, prepare five multicultural recipes (China, India, Mexico, Portugal, Somalia, Vietnam, Thailand, etc.). Use sensory evaluation form in the workbook afterwards to evaluate the recipes.</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
Safe Food Handling	Includes knowledge of how to maintain a clean workspace and how to prevent foodborne illness.	<p>S4.3 “Food Safety Quiz”- short multiple choice quiz with facts about food safety (e.g., storing food, food handling and food preparation).</p> <p>S4.4 “About Foodborne Illness” – learn what foodborne illness is and causes, also what are high and low risk foods. Practice classifying high and low risk foods in an activity.</p> <p>S4.7 “Safe Food Handling at Home” – Fight Bac which are four steps to safe food handling at home. Chill – safe temperatures, refrigerator and freezer storage guidelines and safe thawing of food (reinforced via activity). Clean – hand washing and cleaning surfaces often. Separate – cross-contamination and strategies to avoid. Cook – food safety temperature guidelines.</p> <p>S4.8 “Safe Food Storage” – review OMAFRA Food Handlers’ Storage Guide. Reinforced by “Can you kitchen pass a food storage test?” activity.</p> <p>S5.5 “Cooking Together: Healthy Snacks/Light Meals” – after preparing a snack, participants discuss safe food handling.</p> <p>S6.5 “Cooking Together – Grains” – participants practice preparing grain based dishes. After preparing the dish, participants discuss safe food handling.</p> <p>S6 (FAQ) “Vegetables and Fruit” – information on how to wash vegetables and fruit as part of the FAQ handout.</p> <p>S7.4 “Cooking Together – Milk/Meat & Alternatives - participants practice preparing milk/meat & alternatives dishes and discuss safe food handling.</p> <p>S7.6 “All about milk and alternatives and meats and alternatives” – summarize key points about milk products, eggs, meat, poultry and fish and meat alternatives. Focus on food safety as one topic.</p> <p>S7.8 “Test Questions” – short quiz which includes safe food handling of milk/meat & alternative (e.g., how to handle meat and alternatives and cheese texture and associated risk of spoiling).</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
		<p>S7. “Milk and Alternative Activity Sheet” – discusses pasteurization of milk products.</p> <p>S7. “Meat and Poultry Activity Sheet” – discuss general food safety principles for handling meat and poultry.</p> <p>S.9.8 “Convenience Food Demonstration” – present a convenience food demonstration. Discuss safe food handling of ingredients used.</p> <p>S10.6 “Cooking on a Budget Food Demonstration” – present a low cost food demonstration to the group (spaghetti sauce or chili). Discuss safe food handling of ingredients used.</p> <p>S11.5 “Fun food for kids demonstration” – present a fun food for kids demonstration (e.g. veggie fries, veggie rice roll, lunch box couscous). Discuss safe food handling of ingredients used.</p> <p>S12.4 “Cooking for One Demonstration” – present a low cost food demonstration to the group (tomato ham pasta dinner, egg in a cloud, turkey meatloaves). Discuss safe food handling of ingredients used.</p> <p>16.6 “Cooking Together – Multicultural Recipes” – in small groups, prepare five multicultural recipes (China, India, Mexico, Portugal, Somalia, Vietnam, Thailand, etc.). Discuss safe food handling of ingredients used.</p> <p>RB3 “Section 3 – Food Safety” – includes information on microbial contamination, guidelines for safe food handling, special food safety concerns (e.g. packed lunches, outdoor eating, etc.) and chemical contaminants in food.</p>
Nutrition	Includes having an understanding of the components of food, what nutrients are needed for a healthy lifestyle, what types of nutrients are needed at different life stages and reading/interpreting food	<p>S2.3 “introduction to healthy eating” – review of guidelines promoted in Eating Well with Canada’s Food Guide</p> <p>S2.5 “Grocery Bag Game” – practice classifying foods into different food groups and determining the number of servings contributed by a particular food</p> <p>S2.7 “One Food Guide Fits All” - Food Guide is designed to meet the needs of different people (e.g. young children)</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
	labels.	<p>S2.8 “Active Living” – Canada’s Physical Activity Guide. The amount of physical activity needed, types of activities, guides have been adapted for different groups.</p> <p>S2.11 “One Day Food Record” – practice classifying meals/snacks into CFG categories. Practice classifying types of physical activities.</p> <p>S5.5 “Cooking Together: Healthy Snacks/Light Meals” – after preparing a snack, participants discuss nutrition benefits and nutrition labeling of some of the food products used.</p> <p>S5.7 “Menu Planning Case Study” – case studies assigned, participants are asked to prepare a one day menu for the person in the case study. Menus need to be based on CFG and need to be appropriate based on person’s age and activity level.</p> <p>S6.3 “Warm up: Grain Identification”- participants use smell and touch to identify various grains and then discuss which grains would be a good source of fibre.</p> <p>S6.4 “All About Grain Products” – discuss nutritional value, varieties, fibre, serving sizes, label reading, selection, storage and preparation techniques of grains.</p> <p>S6.7 “All About Vegetables and Fruit” – health benefits, serving sizes, recommended servings, barriers to increasing intake and selection, storage and preparation techniques.</p> <p>S6 (FAQ) “Vegetables and Fruit” – information provided on nutrition & vegetables and fruit (e.g., organic safer, frozen vs. fresh, etc.).</p> <p>S6 “Search for the Starts” – word search for names of fruits and vegetables. Clues about the fruit or vegetable are provided, often with nutrition and health information.</p> <p>S7.3 “Warm up: What’s on the Label?” – milk products, eggs, meat, poultry and fish labels are distributed. Practice reading food labels.</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
		<p>S7.6 “All about milk and alternatives and meats and alternatives” – summarize key points about milk products, eggs, meat, poultry and fish and meat alternatives. Focus on serving sizes, label reading and nutritional value.</p> <p>S7.8 “Test Questions” – short quiz which includes the nutrition of milk/meat & alternative (e.g., serving sizes, low fat cooking , etc.).</p> <p>S7. “Milk and Alternative Activity Sheet” – practice identifying foods that fit in milk & alternatives group in CFG and serving sizes. Also includes reading labels and nutrition value.</p> <p>S7. “Eggs Activity Sheet” – discuss CFG serving size for eggs and nutrients.</p> <p>S7. “Meat and Poultry Activity Sheet” – discuss CFG serving size for different types of meat (e.g. hamburger patty, chicken, etc.), nutrients found in meat and poultry and what makes some cuts of meat more tender.</p> <p>S7 “Fish Activity Sheet” – discuss CFG serving size for fish and why fattier types of fish are considered healthy choices.</p> <p>S7. “Meat Alternatives Activity Sheet” – discuss CFG serving sizes for meat alternatives (e.g., kidney beans, tofu, etc.), different types of meat alternative products and benefits of vegetarian meals.</p> <p>S7. “Milk and Alternatives and Meat and Alternatives Planning a Meatless Meal Cooking Class” – take home activity participants need to suggest at least one meatless meal that would meet the nutritional needs of various groups (e.g. children, senior men, etc.). Asked to share five or more points about meat alternatives and meatless meals.</p> <p>S8.3 “Warm Up: Low Fat, High Fibre Eating Quiz” – discuss CFG key messages about fat and fibre.</p> <p>S8.4 “Are all fats created equal?” – review the benefits of lower fat eating and to discuss the different types of fat. Discuss where to look on food labels for information about fat.</p> <p>S8.5 “Where is the fat? Activity” – in small groups, brainstorm a list of food example of hidden, visible and</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
		<p>added fats within different CFG food groups.</p> <p>S8.7 “How much Fibre?” – review benefits of high fibre eating, sources of fibre and recommendations for fibre intake. Share examples of food labels and where to look to find information about fibre.</p> <p>S8.8 “High Fibre Meal Planning” – working in partners, asked to plan a high fibre meal that has at least 8 to 10 grams of fibre while including at least 3 of the 4 food groups in CFG. Requires knowledge of CFG food groups and possibly label reading.</p> <p>S8.9 “Potato Salad Makeover” – brainstorm ways to subtract fat and add fibre to a potato salad recipe.</p> <p>S.8.9 “Cooking Together Activity – modify potato salad” – participants prepare four versions of a potato salad recipe. Discuss what ingredients were altered to make the recipe lower in fat and higher in fibre.</p> <p>S8. “Healthy Kitchen Tips for Lowering Fat and Increasing Fibre” – a two-page resource listing ‘tricks’ for lowering fat and increasing fibre in meals and recipes.</p> <p>S8. “Test Questions” – short quiz testing knowledge of CFG with respect to reducing the amount of fat and increasing fibre; types of fat; strategies in reducing amount of fat; types of ingredients high in fibre; and strategies for helping people increase the amount of fibre.</p> <p>S8. “Recipe Makeover – Activity Sheet #1 & 2” – take home activity where participants recommend ways for subtracting fat and adding fibre to two recipes (mac & cheese and carrot cake).</p> <p>S8. “Low Fat Eating: FAQ” – A FAQ resource sheet providing information about reducing fat in cooking.</p> <p>S9.4 “Organize the kitchen” – group brainstorms a list of easy to prepare, basic ingredients and foods needed to keep their cupboards, refrigerator and freezer stocked. Asked to organize foods into the food groups in CFG.</p> <p>S9. 7 “Convenience Foods Activity” – participants asked to rate the nutrition (i.e. does it have healthy ingredients, low in fat, high in fibre) for various foods (e.g. pudding, mac and cheese, stir fry, etc.).</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
		<p>S.9.8 “Convenience Food Demonstration” – present a convenience food demonstration. Discuss nutrition labeling of any convenience food products used.</p> <p>S10.6 “Cooking on a Budget Food Demonstration” – present a low cost food demonstration to the group (spaghetti sauce or chili). Discuss nutrition labeling of any convenience food products used.</p> <p>S10.4 “Menu planning on a budget” – Ask participants to share ideas for using leftovers for foods within each food group in CFG.</p> <p>S10.5 “Saving on the food budget activity” – in small groups, participants provided with a grocery store receipt and a variety of advertising flyers and coupons from different grocery stores. Groups are asked to analyze the receipt to see where money was spent and where money could have been saved. They are asked to identify which food group(s) from CFG was most the money spent on.</p> <p>S10 “Test Questions” – participants asked to provide examples of low cost meals for breakfast, lunch and supper and tips for using leftovers in each of CFG food groups.</p> <p>S10 “Healthy Eating on a Budget: FAQ” – a FAQ resource sheet that provides information on healthy eating on a budget.</p> <p>S11.3 “Warm up: Fun food ideas” – participants asked to think about healthy breakfast, lunch and snack ideas for kids. Asked to consider food in each of the food groups in CFG.</p> <p>S11.4 “Healthy eating for children” – discuss key concepts to help children eat well. Refer to CFG’s “Eating Well with CFG”.</p> <p>S11.7 “Better Breakfasts Activity” – participants asked to rate 6 different breakfast meals. Asked to consider CFG’s food groups and fibre content.</p> <p>S11 “Peanut-Free Nutrition for Children” – provides ideas for nut-free snacks for kids.</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.		
Concept	Description	How it is addressed in CFA Training Program
		<p>S11.5 “Fun food for kids demonstration” – present a fun food for kids demonstration (e.g. veggie fries, veggie rice roll, lunch box couscous). Discuss nutrition benefits and labeling of some of the food products used.</p> <p>S12.4 “Cooking for One Demonstration” – present a low cost food demonstration to the group (tomato ham pasta dinner, egg in a cloud, turkey meatloaves). Discuss nutrition benefits and labeling of some of the food products used.</p> <p>S12.7 “Ready-made meals in a flash activity” – participants asked to add other food groups to a ready-made food item to make the meal well balanced following CFG. Also includes a section on “eating out” where participants discuss good choices when eating out. Eat Smart! Onatrio’s Healthy Restaurant Program is discussed.</p> <p>S16.2 “Warm up: Adapting Canada’s Food Guide” – participants asked to list foods common to different cultural groups in their community and then to classify into CFG food groups.</p> <p>S16.4 “Food, culture and healthy eating” – 2 to 3 presentations on different cultural groups. Addresses language, religion, eating patterns, cooking styles, special ingredients, etc. Focus on adaptation of CFG.</p> <p>16.6 “Cooking Together – Multicultural Recipes” – in small groups, prepare five multicultural recipes (China, India, Mexico, Portugal, Somalia, Vietnam, Thailand, etc.). Discuss nutritional benefits.</p> <p>RB2 “Section 2 – Healthy Eating and Active Living” – includes information on CFG to healthy eating, meatless meals and vegetarian diets, healthy meals and snacks and nutrition tips for different age groups.</p> <p>RB4 “Section 4 – Food Shopping” – includes information on food labels, nutrition labeling, nutrition claims, food labeling education programs and food additives.</p> <p>RB7 “Focus on the Food Groups” – includes information on grain products, vegetables and fruit, milk products, meat and alternatives and other foods.</p>
Cooking	Having an understanding of the	S7.6 “All about milk and alternatives and meats and alternatives” – summarize key points about milk products,

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
Times/ Method	time and temperatures required to cook food so that it is safe and appetizing.	<p>eggs, meat, poultry and fish and meat alternatives. May use meat thermometer as a teaching guide to demonstrate cooking times.</p> <p>S7. “Eggs Activity Sheet” – discusses ways to prevent yolks from exploding during microwave cooking and how to prevent a green ring from forming around hard-cooked eggs.</p> <p>S7. “Meat and Poultry Activity Sheet” – discuss preparation methods to improve tenderness of meat.</p> <p>S7. “Fish Activity Sheet” – discuss the best way to cook fish to ensure a healthy, flavourful and quality meal.</p> <p>S7. “Meat Alternatives Activity Sheet” – discuss the correct method to cook fry beans and whole peas.</p> <p>S9.5 “Time Saving Tips” – participants share their time saving tips with everyday meal preparation.</p> <p>S9. 7 “Convenience Foods Activity” – participants asked to rate the preparation/cooking time (i.e., can it be prepared quickly and easily) for various foods (e.g. pudding, mac and cheese, stir fry, etc.).</p> <p>S.9.8 “Convenience Food Demonstration” – present a convenience food demonstration. Discuss ways to save time by preparing in advance.</p> <p>S9 “Test Questions” – participants asked to think of ways to save time, kitchen equipment to use and convenience food ingredients that will help to create quick and easy meals (e.g. cabbage rolls, lasagna, etc.).</p> <p>RB5 “Food Preparation” – includes information on cooking methods (e.g., moist heat, dry heat, microwave, convection, induction and halogen).</p> <p>RB7 “Focus on Food Groups” – includes information on how to prepare and cook various food groups.</p>
Measurement	Having an understanding of the various units of food measurement and how to convert between units (e.g.,	<p>S2.11 “One Day Food Record” – practice measuring the number of servings or fraction of servings from each food group in CFG.</p> <p>S7.6 “All about milk and alternatives and meats and alternatives” – summarize key points about milk products,</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.		
Concept	Description	How it is addressed in CFA Training Program
	grams, litres, etc.).	<p>eggs, meat, poultry and fish and meat alternatives. Possibility to focus on estimating meat portion sizes.</p> <p>S12.4 “Cooking for One Demonstration” – present a low cost food demonstration to the group (tomato ham pasta dinner, egg in a cloud, turkey meatloaves). Discuss reducing quantity of recipes.</p> <p>S12.6 “Reducing Recipes” – resources on how to convert between measurements and how to reduce the quantity of an ingredient (e.g. ¼ tsp reduced to a pinch). Includes a “Reduce this Recipe Activity” sheet where participants are asked to reduce a recipe from 4 to 6 servings to 2 to 3 servings.</p> <p>RB5 “Food Preparation” – includes information on measurement (e.g., metric conversion chart and rules of measuring for different substances).</p> <p>RB7 “Focus on the Food Groups” – includes information on how to cook fruit and vegetables (i.e., cooking times for fresh vegetables).</p>
Budgeting	Having an understanding of the current cost of food items and how to choose items to stay within budget. (unit pricing)	<p>S7. “Meat and Poultry Activity Sheet” – discuss the most economical ways to buy chicken.</p> <p>S9. 7 “Convenience Foods Activity” – participants asked to rate the cost per serving for various foods (e.g. pudding, mac and cheese, stir fry, etc.).</p> <p>S10.3 “Warm up: Money Saving Tips” – participants asked to share tips and techniques they use to save money on their food budget. Includes things they do at home to plan and prepare meals and the things they do at the grocery store when shopping for food.</p> <p>S.10.4 “Smart Shopping Activity” – participants asked to visit a grocery store to find the best buys for various foods. They are asked to write down the brand name, package size and price of the food item that is the best value. Asked to calculate unit prices.</p> <p>S10.5 “Saving on the food budget activity” – in small groups, participants provided with a grocery store receipt and a variety of advertising flyers and coupons from different grocery stores. Groups are asked to analyze the receipt to see where money was spent and where money could have been saved. They are encouraged to look through flyers to see where money could have been saved.</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
		<p>S10.6 “Cooking on a Budget Food Demonstration” – present a low cost food demonstration to the group (spaghetti sauce or chili). Discuss cost savings of food product brands (generic vs. national brands).</p> <p>S10.8 “Smart Shopping” – participants determine the best buy using unit pricing for the different containers of milk and from bulk bins vs. packaged form.</p> <p>S10 “Test Questions” – participants asked to determine what is the best buy based on unit pricing.</p> <p>S11.4 “Healthy eating for children” – discuss key concepts to help children eat well. Refer to CFG’s “Eating Well with CFG”.</p> <p>S11.7 “Better Breakfasts Activity” – participants asked to rate 6 different breakfast meals. Asked to consider cost of different breakfast options.</p> <p>RB4 “Section 4 – Food Shopping” – includes information on budgeting and ways to spend less (e.g., promotions, cost cutting, etc.).</p>
Menu Planning	Having an understanding of factors to consider when planning a menu.	<p>S5.4 “Why make a menu plan?” – discuss benefits of menu planning, factors to consider.</p> <p>S5.8 “Your Menu Plan” – learn about balancing a menu using the balanced menu checklist. Use the checklist to compare to a menu created for a case study.</p> <p>S5.9 “Making a Shopping List and Sticking to it” – discuss the principles of making a shopping list, reinforced by using the Master Shopping List worksheet.</p> <p>S10.4 “Menu planning on a budget” – healthy eating on a budget presentation outlines the benefits of menu planning and tips for planning a low cost menu.</p> <p>S12.3 “Cooking for One Solutions” – in small groups, participants work on various case studies where they are asked to brainstorm one healthy meal for breakfast, lunch and supper when cooking for one.</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.		
Concept	Description	How it is addressed in CFA Training Program
		RB4 “Section 4 – Food Shopping” – includes information on menu planning, making a grocery list and staples to keep on hand.
Peak Season for Fruits and Vegetables	Having an understanding of which fruits and vegetables are available locally and when they are in peak season.	<i>Not addressed</i>
Food Preservation and Storage Techniques	Have an understanding of the various techniques to preserve food safely.	<p>S5.5 “Cooking Together: Healthy Snacks/Light Meals” – after preparing a snack, participants discuss storing leftovers.</p> <p>S6.5 “Cooking Together – Grains” – participants practice preparing grain based dishes. After preparing the dish, participants discuss storing grains and leftovers.</p> <p>S7.4 “Cooking Together – Milk/Meat & Alternatives - participants practice preparing milk/meat & alternatives dishes and discuss storing raw and cooked foods.</p> <p>S7.6 “All about milk and alternatives and meats and alternatives” – summarize key points about milk products, eggs, meat, poultry and fish and meat alternatives. Focus on storage as one topic.</p> <p>S7. “Milk and Alternative Activity Sheet” – discuss storage of cheese.</p> <p>S7. “Eggs Activity Sheet” – discusses storage of eggs.</p> <p>S7. “Fish Activity Sheet” – discuss how long types of fish can be stored in the freezer.</p> <p>S7. “Meat Alternatives Activity Sheet” – discuss storage techniques for tofu.</p> <p>S10.6 “Cooking on a Budget Food Demonstration” – present a low cost food demonstration to the group (spaghetti sauce or chili). Discuss how all purpose quick spaghetti sauce can be prepared as a batch and stored in individual units.</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.		
Concept	Description	How it is addressed in CFA Training Program
		<p>S11.5 “Fun food for kids demonstration” – present a fun food for kids demonstration (e.g. veggie fries, veggie rice roll, lunch box couscous). Discuss storage techniques.</p> <p>S12.4 “Cooking for One Demonstration” – present a low cost food demonstration to the group (tomato ham pasta dinner, egg in a cloud, turkey meatloaves). Discuss how meals can be prepared as a batch and stored in individual units.</p> <p>16.6 “Cooking Together – Multicultural Recipes” – in small groups, prepare five multicultural recipes (China, India, Mexico, Portugal, Somalia, Vietnam, Thailand, etc.). Discuss storing grains and leftover prepared foods.</p> <p>RB6 “Food Storage and Preservation” – includes information on food spoilage, storage life of foods, guidelines for food storage (how to store in cupboard, cold storage, refrigerator and freezer). Includes a chart describing how to freeze various vegetables and fruits.</p> <p>RB7 “Focus on the Food Groups” – includes information on how to store the different food groups.</p>
Built environment	Have an understanding of environmental factors that affect access to fresh, affordable foods.	RB4 “Food Shopping” – includes a topic on food availability and accessibility. Briefly discusses factors that affect where people buy food (e.g., transportation, convenience, cost and cleanliness).
Cooking culturally appropriate meals	Have an understanding of food preferences and restrictions within various cultural groups.	<p>S16.3 “Working with multicultural groups activity” – participants work through a case study where the audience is Middle Eastern women. Asked to work through the principles of effective multicultural group facilitation.</p> <p>S16.4 “Food, culture and healthy eating” – 2 to 3 presentations on different cultural groups. Addresses language, religion, eating patterns, cooking styles, special ingredients, etc.</p>
Food Security	Have an understanding of the factors that affect food security, strategies for working with food insecure groups	<p>S10.9 “Food Security Community Programs” – review definition of food security, factors that impact on food security and review community-based food security programs in the local community.</p> <p>S10.10 “Effective Presentations: Working with Low Income Groups” – participants discuss how they would approach a group of low income, single mothers. What would they consider when designing and delivering a presentation/demonstration? What types of recipes and foods would they discuss? Etc. Focus on sensitivity to</p>

Academic Knowledge: The acquisition of information on topics that are required to select and prepare food safely and effectively.

Concept	Description	How it is addressed in CFA Training Program
		<p>financial situation of the group (discuss lower cost foods, basic cooking tools, options for substitutions).</p> <p>S10 “Test Questions” – participants asked to define food security, describe two food security community programs, and identify considerations when giving a food demo to young, single mothers.</p> <p>S12.3 “Cooking for One Solutions” – in small groups, participants work on various case studies where they are asked to brainstorm one healthy meal for breakfast, lunch and supper when cooking for one. Many of the case studies include cases of people who are food insecure.</p>

APPENDIX III: RESULTS OF FOOD SKILLS SURVEY

Respondent Demographics

Table 1. Survey response by public health unit.

Ontario Public Health Unit	Response Percent	Response Count
Brant County Health Unit	0.8	1
Durham Region Health Department	14.6	18
Elgin-St. Thomas Health Unit	4.1	5
Halton Region Health Department	8.1	10
City of Hamilton-Public Health Services	8.9	11
Huron County Health Unit	4.1	5
Kingston, Frontenac and Lennox & Addington Public Health	10.6	13
Middlesex-London Health Unit	3.3	4
Ottawa Public Health	12.2	15
Regional Municipality of Peel Health Department	18.7	23
Renfrew County & District Health Unit	0.8	1
Sudbury & District Health Unit	3.3	4
Thunder Bay District Health Unit	4.9	6
Wellington-Dufferin-Guelph Public Health	5.7	7
TOTAL	100	123

Table 2. Age distribution of survey respondents.

Age	Response Percent	Response Count
18-24	0	0
25-34	3.3	4
35-44	10.6	13
45-54	32.0	39
55-64	37.7	46
65+	16.4	20
Total	100	122

Table 3. Year survey respondents completed the CFA course.

Year CFA Course Completed	Response Percent	Response Count
1990	0.8	1
1991	0	0
1992	0.8	1
1993	2.5	3
1994	0	0
1995	1.7	2
1996	1.7	2
1997	2.5	3
1998	3.3	4
1999	4.2	5
2000	8.3	10
2001	1.7	2
2002	7.5	9
2003	3.3	4
2004	4.2	5
2005	4.2	5
2006	3.3	4
2007	15.0	18
2008	5.8	7
2009	15.0	18
2010	14.2	17
Total	100	120

Table 4. Years of CFA experience.

Years in the CFA Program	Response Percent	Response Count
<1 year	4.9	6
1 – 2	26.2	32
3 – 4	20.5	25
5 – 6	9.0	11
7 – 8	13.1	16
9 – 10	9.8	12
11 -12	6.6	8
13 – 14	4.1	5
15+	5.7	7
TOTAL	100.0	122

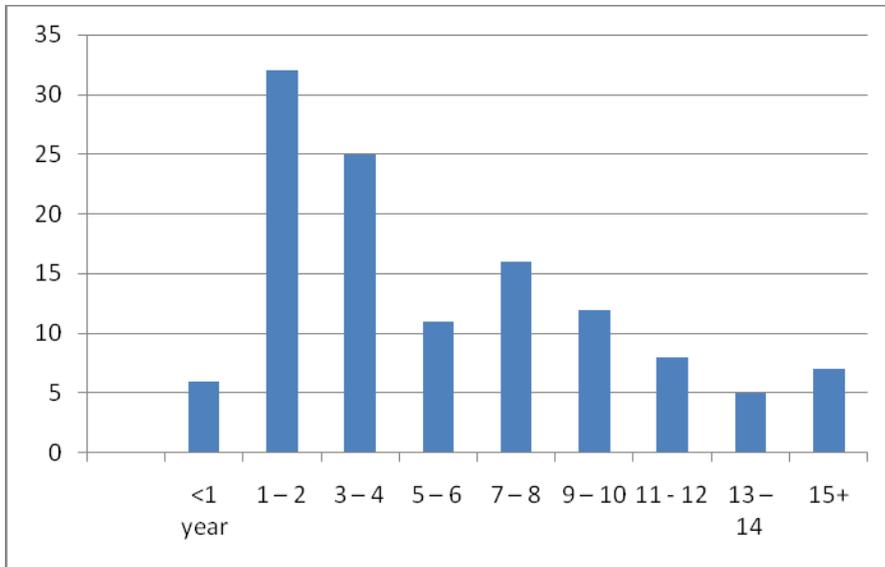


Figure 1. Respondent self-reported years of experience in the CFA program.

Food Preparation Skills

Table 5. Self-reported mechanical skills.

	Never	Rarely	Sometimes	Always	Rating Average (4-pt scale)	Count
Peel, chop or slice vegetables and/or fruits	1	1	13	109	3.85	124
Grill, bbq, pan fry	1	17	65	41	3.18	124
Boil or Steam	1	3	62	58	3.43	124
Cook a piece of raw or frozen meat/chicken/fish	9	5	22	88	3.52	124
Cook a soup, stew or casserole using pre-packaged mix	51	57	12	4	1.75	124
Cook a soup, stew or casserole from scratch	2	6	30	86	3.61	124
Bake breads, muffins or cake using a pre-packaged mix	56	40	27	1	1.78	124
Bake breads, muffins, or cake from scratch with a recipe	3	11	38	72	3.44	124
Canning?						

Table 6. Self-reported conceptual skills.

	Never	Rarely	Sometimes	Always	Rating Average (4-pt scale)	Count
Plan meals using foods already in your home	1	0	42	81	3.64	124
Create new meals out of 'leftovers'	1	1	67	55	3.42	124
Choose a spice or herb to go with a meal	1	9	61	53	3.34	124
Create a meal without the use of a measuring device (e.g. cups, tbsp, tsp, etc.)	3	16	69	36	3.11	124

Table 7. Self-reported planning skills.

	Never	Rarely	Sometimes	Always	Rating Average (4-pt scale)	Count
Plan meals for the week and make a corresponding grocery list	8	31	49	36	2.91	124
Plan and prepare a meal to be served all together within 1 hour	2	6	83	33	3.19	124

Table 8. Self-reported perceptual skills.

	Yes	No	Response Count
Able to judge when a piece of meat/chicken/fish has been cooked properly	118	5	123
Able to judge when bread/cakes/muffins have baked properly	121	2	123

Academic Knowledge

Table 9. Self-reported knowledge of safe food handling.

	Never	Rarely	Sometimes	Always	Rating Average (4-pt scale)	Count
Wash hands before meal preparation	0	0	3	120	3.98	123
Use a thermometer to check temperature when cooking meat	9	16	61	37	3.02	123
Cover foods when they are cooling	11	17	63	32	2.94	123
Refrigerate food promptly	0	1	19	103	3.83	123

Table 10. Self-reported knowledge of food nutrition.

	Never	Rarely	Sometimes	Always	Rating Average (4-pt scale)	Count
Read food labels	0	0	36	87	3.71	123
Select food based on information on the food labels	0	3	50	70	3.54	123
Adjust a recipe to make it healthier	0	1	61	61	3.49	123
Follow Canada's Food Guide when planning meals	1	3	54	65	3.49	123

Table 11. Self-reported knowledge of cooking times, vegetable and fruit peak season, food preservation and storage techniques.

	Never	Rarely	Sometimes	Always	Rating Average (4-pt scale)	Count
(Cooking Times) Prepare a meal that includes 2 or more items that need to be completed and served at the same time	1	2	48	72	3.55	123
(Vegetable and Fruit Peak Season) Choose fruits and vegetables that are in peak season	0	0	32	91	3.74	123
(Food Preservation) Freeze food items from raw to bagged in a home freezer	6	8	78	31	3.09	123

Results from other food skills domains (i.e., cooking experience, household roles, built environment and food security)

Table 12. Self-reported frequency of preparing meals in the past week.

	Response Percent	Response Count
Not at all	0%	0
Few days	6.5%	8
Most days	34.1%	42
Daily	59.3%	73
Total	100%	123

Table 13. Self-report percentage of meals prepared as the primary cook.

	Response Percent	Response Count
0-25%	0.8%	1
25-50%	4.1%	5
50-75%	12.2%	15
75-100%	82.9%	102
Total	100%	123

Table 14. Self-reported food expenditure per week.

Food Expenditure Ranges	Response Percent	Response Count
< \$50	8.9	11
\$50 – 75	14.6	18
\$75 – 100	26.8	33
\$100 – 125	18.7	23
\$125 – 150	17.1	21
\$150 – 175	7.3	9
\$175 – 200	3.3	4
> \$200	3.3	4
Total	100	123

Table 15. Self-reported food expenditure per person per week.

Food Expenditure per Person per Week	Response Percent	Response Count
< \$15	2.5	3
\$15 – 30	20.5	25
\$30 – 45	45.9	56
\$45 – 60	17.2	21
\$60 – 75	9.8	12
\$75 - 90	4.1	5
Total	100	122

Table 16. Self-reported mode of transportation to obtain groceries.

Mode of Transportation	Response Percent	Response Count
Walk	3.3	4
Ride a bike	0.8	1
Drive	95.1	117
Carpool	0	0
Public Transit	0.8	1
Taxi	0	0
Total	100	123

APPENDIX IV: REVISED FOOD SKILLS SURVEY

Demographic Questions:

Gender: M F

Age:

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75+

Location (city or town) where you are involved in the CFA program:

When did you complete the CFA training course (month & year)?

How long have you been a practicing CFA?

How did you first hear about the CFA program?

Food preparation skills:

Mechanical cooking skills

How often do you... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- Peel, chop or slice
- Grill / barbeque / pan fry
- Boil or steam
- Cook a piece of raw or frozen meat/chicken/fish (not processed or partially-prepared)
- Cook a soup, stew or casserole using a pre-packaged mix
- Cook a soup, stew or casserole from scratch
- Bake breads, muffins or cake using a pre-packaged mix
- Bake breads, muffins or cake from scratch with a recipe

- Can fruit or vegetables from raw ingredients to finished products in sealed glass jars

Conceptual skills

How often do you... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- Plan meals using foods already in my home
- Create new meals out of 'leftovers'
- Choose a spice or herb to go with a meal

Planning skills

How often do you... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- Plan meals for the week in advance
- Make a grocery list for a week's worth of meals

Perceptual skills

I am able to judge... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- When a piece of meat/chicken/fish has been cooked properly
- When bread/cakes/muffins have baked properly (YES/NO)
- The quantity of an ingredient without the use of a measuring device (e.g., cups, tbsp, tsp, etc.) (YES/NO)

Academic Knowledge

Safe food handling

How often do you... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- Wash hands before meal preparation
- Cover foods once they have cooled
- Refrigerate food promptly

Nutrition

How often do you... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- Read food labels
- Select food based on information on food labels
- Adjust a recipe to make it healthier
- Follow the Canada's Food Guide when planning meals

Cooking times

How often do you... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- Prepare a meal where 2 or more items require different cooking times, but are served at the same time
- Under or overcook meat/chicken/fish
- Use a thermometer to check temperature when cooking meat

Knowledge of when local fruits/vegetables are in 'peak season'

How often do you... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- Choose fruits and vegetables based on when they are in peak season

Knowledge of food preservation/storage techniques

How often do you... (1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

- Freeze food items from raw to bagged in a home freezer

Practice/experience

- How often did you prepare meals at home in the past 7 days (week)?
 - Not at all
 - Few days
 - Most days
 - Daily

Family/Household roles

- What percentage of meals are you the primary cook in your home?
 - 0-25%
 - 25-50%

- 50-75%
 - 75-100%
- How often do you prepare foods according to your family's specific food tastes?
(1- never, 2- rarely, 3- sometimes, 4- often, and 5- all the time)

Food Security

- Including yourself, how many members are in your household?
- Approximately how much money do you spend on food each week?
 - Less than \$50
 - \$50-75
 - \$75-100
 - \$100-125
 - \$125-150
 - \$150-175
 - \$175-200
 - More than \$200

Built Environment

- I live in a:
 - Rural setting
 - Urban setting
- How do you get to the grocery store?
 - Walk
 - Ride a bike
 - Drive
 - Carpool
 - Public Transit
 - Taxi
 - Other
- Thinking about your community, please rate the affordability of healthy foods on the following scale.
 - Affordability of health foods
(not at all affordable, rarely affordable, somewhat affordable, affordable)
- Thinking about your community, please rate the accessibility to fresh, healthy foods.
 - Ease of accessing fresh, healthy foods
(not at all easy, rarely easy, somewhat easy, easy)

