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DEVELOPMENT, VALIDATION, AND RELIABILITY OF THE KINECT-ED
SURVEY TOOLS

By:

Ashley R. Kirby

A Thesis
Submitted to the Faculty of Graduate Studies
through the Faculty of Human Kinetics
in Partial Fulfillment of the Requirements for
the Degree of Master of Human Kinetics at the
University of Windsor

Windsor, Ontario, Canada

2012

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SURVEY TOOLS

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DECLARATION OF ORIGINALITY

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ABSTRACT

To assess the future success of the Kinect-Ed nutrition and cooking intervention, the purpose of the current study was to develop the Kinect-Ed pre-test, post-test, and parental surveys, establish content and face validity, as well as test-retest reliability and internal consistency. Content validity was examined using an expert panel ($n=7$) and face validity using cognitive interviews ($n=8$). Test-retest reliability of the Kinect-Ed pre-test ($n=129$) and post-test ($n=107$) was completed with young adolescents (9-14 years), while the parent survey was followed up a telephone interview ($n=20$ parents). Test-retest correlations ranged from .499-1.000 with the majority of t -tests revealing non-significant differences while the chi square analyses revealed significant associations ($\Phi=.377-1.000$). Results indicate that the Kinect-Ed surveys have content and face validity and are reliable and, therefore, can be used in the upcoming years to examine the effectiveness of the program for improving family meals, food preparation, and overall diet quality in young adolescents.

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LIST OF ABBREVIATIONS

BMI	Body Mass Index
CCHS	Canadian Community Health Survey
CFLRI	Canadian Fitness and Lifestyle Research Institute
CPAG	Canadian Physical Activity Guide
CSEP	Canadian Society Exercise Physiology
LNDF	Low nutrient dense food
METS	Metabolic equivalent of a task
MVPA	Moderate to vigorous physical activity
NHANES	National Health and Nutrition Examination Survey
SCT	Social Cognitive Theory
WHO	World Health Organization

RESEARCH ARTICLE

Introduction

Due to the increase in childhood obesity rates researchers, clinicians, and health professionals are currently striving to improve physical activity and nutritional behaviours among children and adolescents (Ball & McCargar, 2003; Shields, 2005; Tremblay, Katzmarzyk, & Willms, 2002). Physical activity rates of Canadian children and adolescents have dramatically declined (Canadian Fitness and Lifestyle Research Institute, CFLRI, 2009) with a sedentary lifestyle being adopted (Tremblay et al., 2011), as only 7% of children and adolescents are meeting the recommendations proposed by the Canadian Physical Activity Guide (CPAG; Colley et al., 2011). Overall diet quality of children and adolescents is also concerning (Garriguet, 2006; Veugelers, Fitzegerald, & Johnston, 2005; Woodruff & Hanning, 2010) and is likely impacting energy balance.

Family Meals

Studies have illustrated that eating dinner at home with family is associated with increased nutrition among children and adolescents (Neumark-Sztainer et al., 2003; Veugelers et al., 2005; Woodruff, Hanning, & McGoldrick, 2010a) such as a greater consumption of fruits and vegetables as well as several beneficial nutrients such as fibre, folate, calcium, iron, and vitamins B₆, B₁₂, and E and lower consumption of saturated and trans fat as well as soda and fried foods (Gilman et al., 2000). Research has indicated anywhere from one-quarter to two-thirds of children and adolescents consume family meals on 5 to 7 days per week (Neumark-Sztainer, Hannan, Story, Croll & Perry, 2003; Neumark-Sztainer, Larson, Fulkerson, Eisenberg, & Story, 2010; Woodruff, Hanning, McGoldrick, & Brown, 2010b). However, the frequency of family meals seems to

decrease with increasing age (Gillman et al., 2000) likely as a result of adolescents gaining autonomy from the family. Family meals are not only associated with increased nutrition behaviours, but increased frequency may also be associated with other health constructs such as a decrease in high risk behaviour, negative associations with substance abuse, depression/ suicide, violence and school problems (Eisenberg, Olson, Neumark-Sztainer, Story, Bearinger, 2004; Fulkerson, Neumark-Sztainer, & Story, 2006).

Food Preparation

The importance of family meals is ranked high among parents (Boutelle et al., 2001; Fulkerson et al. 2011), however, the increased number of dual working parent families (Statistics Canada, 2010) often leads to a time constraint as a barrier for meal preparation. Working parents suggested that they would like their children to be more involved in meal preparation but often avoid involving their children due to the time commitment and mess involved (Fulkerson et al., 2011). Children and adolescents who are involved in food preparation are thought to have better diet quality than their peers (Brown & Hermann, 2005; Larson, Story, Eisenberg, & Neumark-Sztainer, 2006) and greater self-efficacy for healthy eating (Chu et al., 2012). The lack of food preparation skills among this generation may result in scratch cooking skills being lost if parents and/or schools fail to teach children and adolescents how to prepare food and meals (Agriculture and Agri-Food Canada, 2005; Dougherty & Silver, 2007).

Due to the decline in diet quality and food preparation involvement, there has recently been a greater focus on cooking interventions geared towards the children and adolescents. However, there seems to be a lack of cooking interventions which are mainly focused on improving overall food preparation skills and increasing frequency of

involvement in preparing food. Many of the cooking interventions focus on improving overall diet quality outcomes such as increasing fruit and vegetable consumption or food preferences, rather than an increase in food preparation. Interestingly, two recent cooking intervention studies, which mainly focused on participant's involvement in food preparation, have found an increased involvement in meal preparation (Blake, Smith, Harmon, & Beets, 2012; Fulkerson et al., 2010).

Kinect-Ed Program

The potential to use cooking skills to teach nutrition and possibly improve children's and adolescent's dietary intakes as well as family meal frequency has led to the creation of the Kinect-Ed Program. The program was developed by Sandi Richard, a *Food Network* Host and international best selling author, and Sarah Woodruff, a professor at the University of Windsor. The program is based on Social Cognitive Theory (SCT), recognizing the reciprocal relationship between the individual and their environment (Bandura, 2004). The interaction between ones' knowledge base, their self-efficacy to change their behaviour, the goals and outcomes they foresee, and the perceived facilitators and obstacles that may influence the change are important considerations (Bandura, 2004). Further, the SCT posits that knowledge acquisition can be directly related to observing others within the context of social interactions, experiences, and outside media influences. Becoming more involved in food/dinner preparation depends not only on the motivation of the individual to want to cook (or learn how to cook), but also on the social norms of cooking/eating within the family context.

The Kinect-Ed program targets Canadian children from grades 6 to 8 with its main goal being to motivate Canadian children to get involved in food preparation. The

grade 6 to 8 age group was chosen since the frequency of family meals seems to decrease after this age as young adolescents are trying to gain autonomy from their parents and are beginning to make decisions for themselves. It is thought that if this age group gets involved in cooking, family meals will improve which may result in better diet quality. The Kinect-Ed program includes a motivational presentation consisting of information and interactive demonstrations focusing mainly on the effects of consuming fat, sugar, and salt. After the in-school visit, the program will continue on-line, which will feature weekly discussions and *how to* videos from Richard, a guest *celebrity of the week*, nutrient/food analysis software, and moderated asynchronous discussion boards. More specifically, the objectives of the Kinect-Ed program include measuring and improving participant's food preparation frequency and techniques/skills, self-efficacy for cooking, family meal frequency, family meal attitudes and behaviours, and their motivation to cook based on the Kinect-Ed presentation.

Purpose

The purpose of this study was to develop the Kinect-Ed survey tools and establish validity and reliability. The specific objectives of this study were: (1) to develop and design a pre-test survey, post-test survey and parental survey, (2) establish content and face validity of the surveys and (3) establish test-retest reliability and internal consistency of the surveys.

Methods

This manuscript has been formatted into 4 phases, including (1) Survey development, (2) Content validity, (3) Face validity, (4) Test-retest reliability and (5)

Parent survey and follow-up interview. Prior to data collection, all procedures were approved by the University of Windsor Research Ethics Board.

For the purpose of this study, a shortened video was created by Sandi Richard to introduce Kinect-Ed to those participating in phases 3 and 4 since a personal visit was not possible. A ~12 minute video was pre-recorded by Sandi Richard, which included a shortened version of the original presentation that will be delivered in future years. The message was meant to be motivational and educational, with an overall attempt to get participants excited about getting in the kitchen and helping out with food preparation for themselves and their families.

Each participant in phase 3 and 4 also received a copy of the *Teen Chefs Cooking, Be In Charge Eat Forward* booklet (Cooking For the Rushed Inc., 2012). This booklet was developed by Sandi Richard and Sarah Woodruff as a resource tool for the Kinect-Ed program. The booklet contains cooking tips, family-friendly recipes, and healthy messages regarding food consumption and body image. Participants were introduced to the booklet during the video presentation and were encouraged to bring it home and share it with their family.

Phase 1: Survey Development

The three surveys were developed based on existing tools involving nutrition and food behaviour studies: Project EAT (www.sph.umn.edu/epi/research/eat/index.asp), the Food Behaviour Questionnaire (www.uwfbq.ca; Hanning et al., 2009), Cooking With Kids (www.cookingwithkids.net; Lohse, Cunningham-Sabo, Walters, & Stacey, 2011), and NHANES (www.cdc.gov/nchs/nhanes.htm). A literature search was conducted to identify previously used surveys and test questions that examined related constructs to the

Kinect-Ed program. Questions were also taken from a pilot study (which was similar in nature) conducted in May, 2011 among grade 6 and 7 students ($n = 154$) from Windsor-Essex County (Woodruff et al., 2012). Lastly, where suitable questions were not available, existing questions were modified or original questions were developed based on the current objectives of the Kinect-Ed program.

Parental Survey

A short five question survey was developed (see Appendix A) based on the current study objectives and designed to be distributed and collected with the parental consent form. The purpose of this survey was to collect information regarding family meal frequency and of family meal behaviours and attitudes, as well as to gauge how comfortable parents are with having their children in the kitchen preparing meals. This survey is a multiple response style survey where the parents need to check the most appropriate answers.

The Kinect-Ed Parent Survey includes 4 questions and a tracking identifier (to be able to match their survey with their child's). The first question examines the frequency of family dinner; two questions examine the parent's comfort level with having their children involved in meal preparation; and the final question examines attitudes and behaviours of the family meal. Family meal frequency is responded to with 3 items depicting the total number of days/week. The first of the two questions for parental comfort is a 4 point Likert question (response options range from *not comfortable* to *very comfortable*). The subsequent question asks parents for possible reasons for this comfort level with several pre-determined responses and an option for "other" with space to explain. Behaviours and attitudes of the family meal are determined through the use of a

10 item question (responses range from *strongly disagree* to *strongly agree* on a 4 point Likert Scale). The 11 items are split up into 5 categories; importance (2 items), communication (2 items), scheduling (3 items), environment (3 items) and enjoyment (1 item) and will be summed and a score out of 40 will be calculated (i.e., higher numbers indicate better family meals). The identical question is asked on the participants surveys (see below for details).

Pre-Test Survey

The main goal of this survey was to establish baseline values for food preparation frequency and techniques, family meal frequency, and family meal behaviours and attitudes among children and adolescents. Data from this survey will provide researchers with baseline data and the ability to measure the effects of the intervention (see Appendix B).

The Kinect-Ed Pre-Test survey (see Table 1) contains 24 questions and is divided into 3 sections. Section A, *Demographics*, has 6 questions specific to age, gender, grade, ethnicity, who lives in their household, and whether adults are home in the early and late evening. Section B, *Food Preparation*, contains 15 questions. The first 3 questions (#B1, #B2, #B3) ask whether the individual cooks and who they cook with, responses range from *Yes, often* to *No, never*. Four questions (#B4, #B6, #B8, #B15a) examine the frequency of food preparation in different ways/time frames, and two questions (#B5, #B7) ask about grocery store visits and meal planning. Question #B9 contains 5 items which examine the individual's attitudes towards food preparation on a 4 point Likert scale (response options range from *Really don't like* to *Really like*). Question #B10 asks whether the individual feels they are encouraged to help out in the kitchen with responses

Table 1
Origination of Kinect-Ed Pre-Test Survey Questions

Kinect-Ed Survey Question	Where Question Originated	Kinect-Ed Objective
Section B: Food Preparation		
1. Do you Cook?	Adapted from Cooking with Kids Inc. (Lohse, Cunningham-Sabo, Walters, & Stacey, 2011)	Food prep. frequency
2. Do you prepare/make food with your family?	Adapted from Cooking with Kids Inc. (Lohse et al., 2011)	Food prep. frequency
3. Do you prepare/make food with your friends?	Adapted from Cooking with Kids Inc. (Lohse et al., 2011)	Food prep. frequency
4. How often are you involved in preparing/making food?	FBQ (Hanning et al., 2009)	Food prep. frequency
5. In the past week, how many times did you help to shop for groceries?	From ProjectEAT (Neumark-Sztainer et al., 2002)	Food prep. frequency
6. In the past week, how many times did you help prepare/make food for dinner?	From ProjectEAT (Neumark-Sztainer et al., 2002)	Food prep. frequency
7. Who does the most planning or preparing of meals in your house?	Similar to NHANES (www.cdc.gov/nchs/nhanes.htm)	Food prep. frequency
8. How often would you like to be involved in preparing/making food?	New question	Food prep. frequency
9. Check the box that best describes how you feel about the following statements:	Adapted from Cooking with Kids Inc. (Lohse et al., 2011)	Attitudes towards cooking
10. How much do your parents/ stepparents/ guardians encourage you to help out in the kitchen?	New question	Food prep. frequency
11. Check the box that best describes how you feel about the following statements:	Adapted from Cooking with Kids Inc. (Lohse et al., 2011)	Self-efficacy for cooking
12. What do you get to do when preparing/making food?	New question	Food prep. techniques
13. What would you like to do when preparing/making food?	New question	Food prep. techniques
14. Give an example of something you prepared/cooked in the last 7 days:	New question	Food prep. techniques
15a. Thinking about the last 7 days, indicate when you were involved	Kinect-Ed Pilot study (Woodruff,	Food prep. frequency

in preparing/making food? 15b. When making meals, what type of food preparation do you get to do?	Richard, Kirby, & Holash, 2012) Kinect-Ed Pilot study (Woodruff et al., 2012)	Food prep. techniques
Section C: Family Meals		
1. Typically, how many days per week do you eat dinner/supper with at least one parent/guardian?	FBQ (Hanning et al., 2009)	Family meal frequency
2. How strongly do you agree or disagree with the following statements about mealtimes in your family?	Adapted from ProjectEAT (Neumark-Sztainer et al., 2002)	Family meal behaviours and attitudes
3. How strongly do you agree or disagree with the following statements about mealtimes in your family?	Adapted from ProjectEAT (Neumark-Sztainer et al., 2002)	Family meal behaviours and attitudes

Note. Cooking with Kids (www.cookingwithkids.net), FBQ (Food Behaviour Questionnaire; www.uwfbq.ca), ProjectEAT (<http://www.sph.umn.edu/epi/research/eat/surveys/>), NHANES (National Health and Nutrition Examination Survey; www.cdc.gov/nchs/nhanes.htm).

ranging from *Strongly encourage* to *Strongly discourage*. Question #B11 has 8 items (answered on a 4 point Likert scale) that will make up a self-efficacy for cooking scale. Questions #B12, #B13 and #B14 are open ended questions which ask about what the participant gets to do when making/preparing food, what they would like to do, and to provide examples of the types of foods they get to prepare/cook. Question #B15b has 11 items with *Breakfast, Lunch, Dinner, and Do not do* options based on different types of food preparation techniques. This question will be used (i.e., summed out of 33) to provide a measure of meal preparation techniques (i.e., higher scores will represent being involved in more food preparation techniques).

Section C, *Family Meals*, includes three questions. The first question (#C1) investigates the frequency of family dinners (identical to the parent survey), while the last two questions examine the attitudes and behaviours surrounding family meals (as reported above in the parent survey). Three additional attitude and behaviour questions were added to the pre-test (yet asked in a similar fashion). In this case, the 14 items fall into 5 categories; importance (3 items), communication (2 items), scheduling (4 items), environment (3 items) and enjoyment (2 items). Therefore, the behaviours and attitudes scale will be a score out of 56 (rather than 40 on the parent survey).

Post-Test Survey

The purpose of this survey (Appendix C) is to measure changes in food preparation frequency and techniques, family meal frequency, and family meal behaviours and attitudes, as a result of the Kinect-Ed presentation by Sandi Richard. By comparing the data from the pre- and post-test surveys the effects of the intervention will be established.

The Kinect-Ed Post Test Survey (see Table 2) has 32 questions which are divided into 6 sections. The post-test contains all three sections of the pre-test (as described above with identical questions, minus #A5 and #A6 which are not expected to change over the course of the follow up testing), plus the addition of Sandi Richard's visit (section C), and whether or not the participant tried out any of the recipes from the resource booklet (Sections D-cooked a recipe and E-didn't cook a recipe).

Section C, *Sandi Richards's Visit*, contains a total of 6 questions. Questions #C1, #C2 and #C3 ask how much the individual enjoyed Sandi Richards's visit, what they liked best about the visit, and if Sandi Richard's visit motivated them to start preparing/making meals, respectively. Question #C4 and #C6 investigates whether the individual talked with their parents about helping out in the kitchen, if they shared the booklet and, if so, with whom. Lastly, Question #C5 inquires whether the individual has changed any of the health behaviours as a result of Sandi Richard's visit.

Depending on whether the participant cooked a recipe from the booklet, participants will either answer Section D or Section E. Section D contains 5 questions asking if the individual cooked one of Sandi Richard's recipes in the booklet. Question #D1 is an open-ended question asking what the individual liked about the recipe. Question #D2 asks about which food preparation techniques the participant employed when cooking the recipe (i.e., check all that apply with 9 items). Question #D3 is a 4 point Likert scale question which asks how easy the recipe was to prepare with responses ranging from *Very Hard* to *Very Easy*. Question #D4 is a 7 item check all that apply question asking who ate the meal. Question #D5 asks whether or not the participant would like to try more of Sandi Richard's recipes, followed by an open ended question

Table 2

Origination of Kinect-Ed Post-Test Survey Questions

Kinect-Ed Post-test Survey Question	Where Question Originated	Kinect-Ed Objective
Sandi Richard's Visit Section		
1. How much did you enjoy or not enjoy Sandi's visit	Used in Kinect-Ed Pilot study (Woodruff et al., 2012)	Presentation evaluation
2. What did you like best about Sandi's visit?	Used in Kinect-Ed Pilot study (Woodruff et al., 2012)	Presentation evaluation
3. How much did Sandi motivate or not motivate you to start preparing/making meals	Used in Kinect-Ed Pilot study (Woodruff et al., 2012)	Motivation to be involved
4. Since Sandi's visit to your school, did you have a talk with your parents about getting in the kitchen and helping to make meals?	New Question	Motivation to be involved
5. Have you changed any health behaviours as a result of Sandi's visit?	New Question	Presentation evaluation
6. Did you share or show anyone else the booklet that Sandi gave you?	Used in Kinect-Ed Pilot study (Woodruff et al., 2012)	Motivation to be involved
Did cook one of Sandi Richard's recipes Section		
1. What did you like about the recipe?	All questions used in Kinect-Ed Pilot study (Woodruff et al., 2012)	Food prep. attitudes
2. What did you get to do?		Food prep. techniques
3. How easy or hard do you think the recipe was to prepare?		Food prep. skills
4. Who ate the meal		Family meals
5. Would you like to try more of Sandi's recipes or other recipes soon?		Motivation/ Food prep. frequency
Didn't cook one of Sandi Richard's recipes Section		
1. Why didn't you cook one of Sandi's recipes?	Both questions used in Kinect-Ed Pilot study (Woodruff et al., 2012)	Motivation
2. Do you plan on trying one of Sandi's recipes soon?		Motivation/ Food prep. frequency

asking why or why not. Section E contains 2 questions for those participants that did not cook one of the recipes from the booklet. The first question (#E1) is a check all that apply 8 item question asking why they did not prepare a recipe (7 potential reasons given with an 8th option for other and space to provide their own explanation). Question #E2 asks if they plan on trying one of the recipes soon, and is followed by an open ended question to explain why or why not.

Phase 2: Content Validity

Methods

The purpose of the expert panel was to ensure the surveys possessed content validity. This stage helped to identify subject matter areas and/or content domains related to food preparation and family meals that may have been overlooked or missed (Townsend, 2006). A total of 13 experts (PhD's or Registered Dietitians) working in the field of nutrition and food behaviours involving children and adolescents were invited to participate via email (Appendix D). The list of experts was generated from authors of current published manuscripts and those known to be working in the area of childhood and adolescent nutrition behaviours. The email instructed the experts as to what was expected from their participation in the study and provided them with a consent to participate and information letter (Appendix E). The experts were asked to return their signed consent form along with their comments after reviewing and critiquing the surveys (Appendix A, B, and C) for content and clarity as well as to provide input and suggestions in order to improve the surveys. After the surveys were reviewed by the expert panel, modifications and adjustments were made to the Kinect-Ed survey in order to improve the surveys.

Participants

The Kinect-Ed Parental, Kinect-Ed Pre-test and Kinect-Ed Post-test surveys were sent out via email to 13 identified experts in childhood/ adolescent nutrition (PhD's and registered dietitians). A total of 7 experts (representing 54%) reviewed the surveys and participated in the study.

Results

Kinect-Ed parent survey. As a result of the expert panel's critique, a total of 6 changes were made to the Kinect-Ed parental survey (Appendix F for specific changes). These changes include the rewording of two questions, addition of one option to questions #3, and the addition of three items to question #4.

Kinect-Ed pre-test survey. From the expert panel's review, a total of 17 changes were made to the pre-test survey (Appendix F). Questions were re-arranged so that they appeared in the same order on both the pre- and post-test surveys. Changes to questions included four questions/option being reworded, the addition of eight options, the removal of three options from scale questions and the combination of two questions to create the family meal behaviours and attitudes scale.

Kinect-Ed post-test survey. As a result of the expert panel review, a total of 10 changes were made to the post-test survey (Appendix F). Questions that appear on both the pre- and post- test were edited to reflect the results of the expert panel's suggestions. The changes were a result of the addition of five options, the removal of *neither* from three scale questions, and the addition of two questions.

Phase 3: Face Validity

Methods

In order to determine whether the pre- and post-test surveys (Appendix G for updated surveys) were understandable and answerable by the intended target audience, cognitive testing interviews were employed (Townsend, 2006; Willis, 1994) with one of the after school programs (See Appendix H for Parent Consent Form- Validity). Using Willis's qualitative testing strategies for questionnaire development, think aloud, probing, and paraphrasing techniques were used after the participants completed the pre- and post-test surveys individually (on separate weeks). Refer to Appendix I for the detailed interview scripts which were used during data collection. The cognitive interviews were conducted in a group setting; rather than individually, and attempted to understand the participants' comprehension and interpretation of the questions, how they came up with their answers, their ability to repeat items in their own words, and give possible suggestions for wording changes. Notes were taken by the primary researcher, as well as a research assistant, in order to capture all information. More specifically, Session 1 included participants completing the child assent form (See Appendix J), pre-test survey, cognitive interview, followed by watching the Kinect-Ed video and receiving the Kinect-Ed Booklet. Session 2 included completing the post-test survey and cognitive interview. Each session took approximately 30-45 minutes, and modifications to the surveys were made to wording of items that are not well understood.

Participants

Cognitive interviews were used with one after school program. The cognitive interview consisted of the participants, a moderator (a graduate student), and an assistant

moderator (a professor who had experience with focus groups and was responsible for note taking). For the Kinect-Ed Pre-test, participants ($n=8$) included 4 males and 4 females with a mean age of 10.25 years (ranging from 9 to 12 years, $SD=1.04$). They identified themselves as White ($n=1$), Black ($n=1$), Chinese ($n=1$), South Asian ($n=2$), and Other ($n=3$; Pakistani and Eritean). One week later the Kinect-Ed post-test survey underwent the same procedures as the pre-test. Since it was not imperative that the same participants were present, only 3 participants were present for both the pre- and post-test cognitive interviews and 4 new participants were included. Participants ($n=7$) included 5 females and 2 males with a mean age of 10.57 years (ranging from 9 to 12 years, $SD=1.13$). Participants identified themselves as White ($n=3$), Black ($n=2$), Chinese ($n=1$) and South Asian ($n=1$).

Results

Kinect-Ed pre-test survey. As a result of the cognitive interview, a total of 23 changes were made to the Kinect-Ed pre-test survey (See Appendix K for the specific changes). The changes included the reformatting the tracking identification code, adding examples to the ethnicity question, nine questions/options were reworded, the addition of six options and one question. Questions that appeared on both the pre- and post-test surveys were edited to reflect the results of the cognitive interview.

Kinect-Ed post-test survey. As a result of the group cognitive interview, six changes were made to the post-test survey (Appendix K). The tracking identification code and ethnicity question were further reworded as well as the rewording of three other questions/options.

Phase 4: Test-Retest Reliability

Methods

In order to establish reliability of the surveys, participants (from after school programs, youth programming, and a school) completed each survey two separate times, one week apart (see Appendix L for updated surveys). According to Townsend (2006), if any test items are consistent/reliable, then respondents will reply to the item with the same answer, with no educational intervention. Test-retest reliability procedures took four weeks in total with parent consent being obtained before week 1 of data collection (See Appendix M for Parent Consent Forms). Week 1 included an introduction to the researchers and protocol (how to complete the survey), followed by the participants completing the child assent form (See Appendix N), and the pre-test (session took 10~20 minutes). Given this was a validation study, it was important that the participant's answers were trackable, therefore, participants created individual tracking identifiers by creating a four digit number on top of their survey. The ID's were created based on their date of birth (01-31) and the last 2 digits of their phone number (00-99). This code ensured answers were kept anonymous to the researchers and traceable over the weeks. Week 2 included completing the pre-test again and watching the Kinect-Ed video (session took ~20 to 35 minutes). Weeks 3 and 4 included completing the post-test (session took 10 ~20 minutes).

Validity of the sample size. Previous nutrition and food behaviour validity and reliability studies were taken into account when deciding on sample size. As the greatest number of participants would be needed for the test-retest reliability portions of the study, Stata version 12.0 Software for Windows (College Station, TX, USA, 2011) was used to

calculate sample size for a Pearson Correlation. It was estimated that, with a null Rho of .50 and an alternative Rho of .70, a sample size of 81 participants was required to obtain a power level of .80 at an alpha level of .05. Further, based on other nutrition and food behaviour surveys (Gower, Moyer-Mileur, Wilkinson, Slater, & Jordan, 2011; Lohse et al., 2011; Neuhouser, Lilley, Lund, & Johnson, 2009; Turconi et al., 2003) which used Pearson's correlation to determine test-retest reliability, significant r values from .49 to .90 were reported. From this it was decided, that an r value from .50 to .69 will be classified as moderate and r values from .70 to 1 as high.

Data Analysis

Data collected as part of the reliability portion of the study was analyzed using Statistical Package for the Social Sciences (SPSS version 20.0 for Windows, Somers, NY, USA, 2011). An alpha level of .05 was set for all statistical analysis.

Test-retest reliability. Questions which contained ordinal data were coded and bivariate correlations using the Pearson's correlation coefficient. Paired t -tests were computed to test the difference in means from pre-test survey time one (T1) and time two (T2) as well as post-test survey T1 and T2 in order to establish test-retest reliability. Crosstabs using the chi square analysis and Phi coefficients (or Cramers V for the ethnicity question #A4) were computed on survey questions containing nominal data in order to compare the scores from T1 and T2. The Crosstabs analysis also allowed for the number of participants whose answers changed from T1 and T2 to be calculated. Effect sizes were calculated for significant differences in t values between T1 and T2 and were calculated using in Cohen's d order to determine the practical significance. An effect size

of $\leq .20$ considered small, $.50$ considered moderate and $\geq .80$ considered large (Cohen, 1988).

Internal consistency reliability. In order to assess the homogeneity of some of the questions and to determine if all questions are necessary on the survey, internal reliability was calculated on the scale-types questions (pre-test T1 and T2) using Cronbach's coefficient alpha (Cronbach, 1951; Nunnally & Bernstein, 1994). This analysis provided information about the relationships between individual items in the scale and was used to determine if all questions are needed. George and Mallery (2003) classify Cronbach's alpha as $\geq .9$ as excellent, $\geq .8$ as good, $\geq .7$ acceptable, $\geq .6$ questionable, $\geq .5$ poor and $\leq .5$ unacceptable.

Participants

Test-retest reliability participants were recruited from 6 centers: the YMCA afterschool programs ($n=2$), youth programming and sport clubs within Windsor Essex County ($n=3$) and a school from the Windsor Essex Catholic District School Board ($n=1$). The participants included young adolescents who filled out the pre-test survey at T1 ($n=145$) and T2 ($n=129$). Of the 129 participants 57% were female ($n=74$) and 43% were male ($n=55$). Participants were in grades 4 ($n=7$), 5 ($n=10$), 6 ($n=13$), 7 ($n=49$), and 8 ($n=50$). Participants identified themselves as White ($n=103$), Black ($n=3$), Chinese ($n=3$), Arabic ($n=6$), South Asian ($n=1$), or Other ($n=13$). Among the participants who filled out the Kinect-Ed post-test survey at T1 ($n=126$) and T2 ($n=107$) included 107 young adolescents. Of the 107 participants 57% were female ($n=61$) and 43% were male ($n=46$). Participants were in grades 4 ($n=9$), 5 ($n=10$), 6 ($n=12$), 7 ($n=40$), 8 ($n=36$).

Participants identified themselves as White ($n = 84$), Black ($n = 3$), Chinese ($n = 3$), Arabic ($n = 5$), South Asian ($n = 1$), or Other ($n = 11$).

Results

Kinect-Ed Pre-Test Survey.

Section A: Demographics. Data from all six questions which make up the *Demographic* section of the survey were in good agreement between T1 and T2 (see Table 3). Pearson correlations values ranged from moderate to high ($r = .580$ to 1.000 , $p < .001$) indicating a good linear agreement between responses. Paired t -tests revealed non-significant differences between T1 and T2 with the exception of question #A6b (adults home b/t 5-7 pm) ($t(121) = 2.476$, $p = .015$, cohen's $d = .22$, M : T1 = 3.57, T2 = 3.41, $SD = .76$). Chi square analyses revealed statistically significant associations between T1 and T2 ($p < .001$). Phi coefficient values ranged from 0.565 (adult siblings at home) to 1.000 (grandparents). Cramers V coefficient for question #A4 (ethnicity) revealed a strong agreement between T1 and T2 scores (Cramers V = 1.000, $p < .001$).

Section B: Food preparation. Data from all questions in the *Food Preparation* section were deemed to be in good agreement between T1 and T2 except for question #B15b (See Table 4). For example, Pearson's correlations ranged from .479 to .854 ($p < .001$) with the majority of the paired t -tests revealing non-significant differences for scores on T1 and T2. The self-efficacy scale question (#B11) also showed good agreement ($r = 0.854$, $p < .001$) between T1 and T2. A significant paired t -test for the combined food preparation technique scale question (i.e., all of the food preparation techniques added together to form a score out of 33) suggesting that scores differed between testing ($t(89) = -3.219$, $p = .002$, cohen's $d = .26$, M : T1 = 10.79, T2 = 11.81,

Table 3
Test-Retest Reliability Scores of Kinect-Ed Pre-Test Survey Demographics Section

	Pearson		<i>t</i>	χ^2	Phi
	<i>r</i>	<i>p</i>			
A. Demographics					
1. Age	.988	<.001	<i>t</i> (128)=-1.346, <i>p</i> =0.181		
2. Sex				120.952, <i>p</i> <.001	.968
3. Grade	1.000	<.001	*		
4. Ethnicity				645.000, <i>p</i> <.001	1.000 ^a
5. What adults live with you:					
5a. Mother/ Stepmother				80.904, <i>p</i> <.001	.792
5b. Father/Stepfather				101.320 <i>p</i> <.001	.886
5c. Grandparents				129.000, <i>p</i> <.001	1.000
5d. Parents				**	**
5e. Guardian				**	**
5f. Siblings				41.161, <i>p</i> <.001	.565
5g. Other				129.000, <i>p</i> <.001	1.000
6a. Adult home 2-5pm	.703	<.001	<i>t</i> (128)=-.639, <i>p</i> =.524		
6b. Adult home 5-7 pm	.580	<.001	<i>t</i> (121)=2.476, <i>p</i> =.015		

Note. A Cramer's V was reported for #A1 Ethnicity.* *t* cannot be computed because the standard error of the difference is 0.

**Measures of association cannot be computed because at least one variable is constant. The df for all $\chi^2 = 1$.

Table 4

Test-Retest Reliability Scores of Kinect-Ed Pre-Test Survey Food Preparation and Family Meal Section

	Pearson		<i>t</i>	χ^2	Phi
	<i>r</i>	<i>p</i>			
B. Food Preparation					
1. Do you cook?	.613	<.001	t(127)=-.506, <i>p</i> =.314		
2. Do you cook with family?	.591	<.001	t(128)=-1.185, <i>p</i> =.238		
3. Do you cook with friends?	.711	<.001	t(128)=-1.135, <i>p</i> =.258		
4. How often do you make food?	.791	<.001	t(126)=.576, <i>p</i> =.566		
5. In the past week did you help shop for groceries?	.479	<.001	t(127)=.894, <i>p</i> =.373		
6. In the past week how many times did you help make dinner?	.645	<.001	t(127)=-1.130, <i>p</i> =.261		
7. Who does the planning or preparing of meals in your house:	.591	<.001	t(128)=-1.185, <i>p</i> =.238		
7a. Mother/Stepmother				57.489, <i>p</i> <.001	.670
7b. Father/ Stepfather				74.350, <i>p</i> <.001	.762
7c. I do				62.984, <i>p</i> <.001	.701
7d. Grandparent				40.971, <i>p</i> <.001	.566
7e. Sibling				30.992, <i>p</i> <.001	.492
7f. Nanny/ babysitter				128.000, <i>p</i> <.001	1.000
7g. Other				*	*
7h. I don't know				*	*
8. How often would you like to be involved in food preparation?	.683	<.001	t(127)=.115, <i>p</i> =.909		
9. How do you feel about:					
9a. Cooking	.741	<.001	t(128)=.506, <i>p</i> =.614		
9b. The taste of food you have to prepare/make	.723	<.001	t(128)=.111, <i>p</i> =.120		
9c. Making food with friends	.675	<.001	t(126)=-.080, <i>p</i> =.936		
9d. Making food with family	.665	<.001	t(126)=.106, <i>p</i> =.916		
9e. Making snacks	.533	<.001	t(124)=-1.581, <i>p</i> =.116		
10. How much are you encouraged to help out in the kitchen	.714	<.001	t(126)=-1.096, <i>p</i> =.275		
11. Self-Efficacy Scale	.854	<.001	t(121)=-1.148, <i>p</i> =.253		
12. I don't make food				59.163, <i>p</i> <.001	.683
13. What would you like to do when preparing/making food?	**		**		

14. I didn't make food in past 7 days				28.763, $p < .001$	.472
15a. I wasn't involved in preparing foods in the last 7 days				24.178, $p < .001$	.435
15a. Meal total Scale (out 21)	.611	<.001	$t(87) = .236, p = .814$		
15b. I am not involved in making food				18.422, $p < .001$	.379
15b. Food Preparation (Total out of 11)	.753	<.001	$t(89) = -2.721, p = .008$		
C. Family Meals					
1. How many nights per/wk do you eat dinner with one parent/ guardian	.669	<.001	$t(128) = .925, p = .357$		
2. Family Meal Scale (out of 56)	.906	<.001	$t(123) = 1.447, p = .150$		

Note. *Measures of association cannot be computed because at least one variable is constant. The df for all $\chi^2 = 1$. **Open ended question no stats computed.

$SD = 5.85$), because of this, the question was also analyzed out of 11 (one point was awarded if the participant had checked off that they did the technique at breakfast, lunch or dinner) which again resulted in a significant difference between T1 and T2 scores ($t(89)=2.721$ $p=.008$, cohen's $d=.20$, M : T1 = 7.31, T2 = 7.81, $SD = 2.47$). The scales were found to be correlated for both analyses ($r=.724$ and $r=.753$), however, a significant t -test resulted ($p=.008$), since the options did not change and data was just recoded so there was still a lot of variation between scores. Lastly, chi square analyses suggested good agreement between T1 and T2 with all p values $<.001$ and phi coefficients ranging from .377 to 1.000.

Section C: Family meals. The frequency of family meals was found to be significantly correlated ($r=.669$, $p<.001$) between T1 and T2 (see Table 4). The family meal behaviours and attitude scale (combined scale of 14 items from questions #C2 and #C3) revealed significant correlations. Paired t -tests revealed non-significant difference between T1 and T2 scores for all questions, with the overall total of the family meal scale was found to be highly correlated ($r=.906$, $p <.001$).

Kinect-Ed Post-Test Survey.

A total of 19 identical questions appeared on the pre- and post-test surveys. The majority of questions from the *Food Preparation* section revealed higher correlation values on the post-test than the pre-test analysis (see Appendix O for full analyses). Pearson correlations ranged from .593 to .863 ($p>.001$) with all paired t -tests revealing non-significant differences between T1 and T2. Chi square analyses revealed statistically significant associations between T1 and T2 ($p <.001$; Phi ranging from .505 to 1.000). The only major difference between reliability results on the pre- and post-test surveys

was found for question #B15b (food preparation technique scale). The paired *t*-test performed on the overall total of food preparation technique scale (out of 11) revealed a non-significant difference between post-test T1 and T2 ($t(80)=1.146, p=.255$) compared to significant difference between pre-test T1 and T2. Furthermore, the majority of questions from the *Family Meal* section revealed higher correlations on the post-test than the pre-test with *r* values ranging from .642 to .891 ($p>.001$) with all paired *t*-tests revealing non-significant differences, except for question #C2b (mealtime is a time for talking with other family members: $t(105)=-2.749, p=.007$, cohen's $d=.14$, $M: T1 =3.40, T2 =3.50, SD =.71$).

Section D: Sandi Richard's visit. Questions #D1 (How much did you enjoy the visit) and #D2 (How much were you motivated by the visit?) revealed significant correlations ($r=.766, .768, p <.001$). Paired *t*-tests revealed non-significant differences between T1 and T2 for all questions except #D2 (How much were you motivated?) ($t(103)=2.175, p=.032$, cohen's $d=.14$, $M: T1 =2.78, T2 =2.65, SD =.88$). Chi square analyses revealed statistically significant associations between T1 and T2 ($p <.001$ to $p=.003$). Phi coefficients for question #D5 (Did you share the booklet?) ranged from .466 (parents/guardians) to .780 (friends; see Table 5).

Section E: Did cook one of Sandi Richard's recipes. Chi square analyses revealed statistically significant associations between T1 and T2 for all of question #E4 (Who ate the meal) as well as #E2b (used oven/ stove), #E2f (set the table) and #E2h (put together food/ meal) (See Table 6). Phi coefficients ranged from .400, $p=.290$ (#E2d-used can opener) to 1.000 (#E2b- used oven/stove, #E4). Pearson correlations revealed a

Table 5

Test-Retest Reliability Scores of Kinect-Ed Post-Test Survey Sandi Richard's Visit Section

	Pearson		<i>t</i>	χ^2	Phi
	<i>r</i>	<i>p</i>			
D. Sandi Richard's Visit					
1. How much did you enjoy Sandi's visit?	.766	<.001	t(106)=-.754, <i>p</i> =.452		
2. How much did Sandi motivate or not motivate you to start making meals?	.768	<.001	t(103)=2.175, <i>p</i> =.032		
3. Since Sandi's visit, did you have a talk with your parent about getting in the kitchen and helping to make meals?				23.743 <i>p</i> <.001	.471
4. Have you changed any health behaviours as a result of Sandi's visit?				34.973 <i>p</i> <.001	.572
5a. Did you share or show anyone else the booklet Sandi gave you?				40.972 <i>p</i> <.001	.657
5. Parents/ guardians				8.700 <i>p</i> =.003	.466
5. Siblings				13.789 <i>p</i> <.001	.587
5. Grandparents				15.873 <i>p</i> <.001	.630
5. Aunts/ uncles/ cousins				8.975 <i>p</i> =.003	.474
5. Friends				24.314 <i>p</i> <.001	.780
5. Other				*	*

*Note.** No analysis was computed because at least one variable is constant. The df for all $\chi^2 = 1$.

Table 6

Test-Retest Reliability Scores of Kinect-Ed Post-Test Survey Did Cook One of Sandi Richard's Recipes Section

	Pearson		<i>t</i>	χ^2	Phi
	<i>r</i>	<i>p</i>			
E. Did you cook one of Sandi Richard's recipes?				34.588, <i>p</i> <.001	.569
2. What did you get to do					
2a. Cut up foods				1.566, <i>p</i> =.212	.471
2b. Used oven/stove				7.000, <i>p</i> =.008	1.000
2c. Mixed ingredients				2.917, <i>p</i> =.088	.645
2d. Used can opener				1.120, <i>p</i> =.290	.400
2e. Measured ingredients				3.733, <i>p</i> =.053	.730
2f. Set the table				3.938, <i>p</i> =.047	.750
2g. Peeled vegetables				3.733, <i>p</i> =.053	.730
2h. Put together the food/meal				3.938, <i>p</i> =.047	.750
2i. Other				*	*
3. How easy or hard do you think the recipe was to prepare?	.730	.062	<i>t</i> (6)=1.000, <i>p</i> =.356		
4. Who ate the meal?					
4a. Parents/ guardians				*	*
4b. Siblings				7.000, <i>p</i> =.008	1.000
4c. Grandparents				7.000, <i>p</i> =.008	1.000
4d. Aunts/ uncles/ cousins				7.000, <i>p</i> =.008	1.000
4e. Friends				*	*
4f. Only me				7.000, <i>p</i> =.008	1.000
4g. Other				7.000, <i>p</i> =.008	1.000
5. Would you like to try more of Sandi's recipes soon?				*	*

*Note.** Measures of association cannot be computed because at least one variable is constant. The df for all χ^2 =1.

high correlation ($r=.730, p=.062$) for question #E3 (How hard/easy did you think the recipe was to prepare). Paired t -tests revealed non-significant differences between T1 and T2 scores (See Table 6).

Section F: Didn't cook one of Sandi Richard's recipes. All questions in this section were found to be in good agreement between T1 and T2, except #F1e (I didn't think I could do it well enough; see Table 7). Chi square analysis revealed a statistically significant association between T1 and T2 ($p<.001$) for all questions except #F1e (I didn't think I could do it well enough) ($\chi^2 (N=91, 1) = 2.330, p=.127$). Phi coefficients ranged from 0.160 (#F1e-I didn't think I could it do it well enough) to 0.840 (#F1c- We don't usually have those ingredients).

Table 7
Test-Retest Reliability Scores of Kinect-Ed Post-Test Survey Didn't Cook One of Sandi Richard's Recipes Sections

	χ^2	Phi
F. Didn't cook one of Sandi Richard's recipes:		
1. Why didn't you cook one of Sandi's recipes?		
a. I was too busy	43.362, $p<.001$	.698
b. I didn't like the foods in the booklet	40.557, $p<.001$	.668
c. We don't usually have those ingredients in my house	64.263, $p<.001$	.840
d. I don't like cooking	34.370, $p<.001$	.615
e. I didn't think I could do it well enough	2.330, $p=.127$	.160
f. I have food allergies	*	*
g. I was too lazy	37.994, $p<.001$	.646
h. Other	16.058, $p<.001$	.418

Note. *No analyses were computed because at least one variable is constant. The df for all $\chi^2 = 1$.

Internal Consistency Reliability.

Cronbach's alpha calculations were calculated for 3 scales (self-efficacy for cooking, food preparation techniques, and family meal behaviours and attitude) for the

pre-test T1 and T2 (see Appendix P for complete analyses). Self-efficacy for cooking (#B11) was found to have a good level of internal consistency (pre-test Cronbach's α T1=.811, pre-test Cronbach's α T2=.875) and all items in the scale were found to be relevant to the scale. The food preparation technique scale was found to have an acceptable level of internal consistency (pre-test T1 Cronbach's α =.725, and pre-test T2 Cronbach's α =.761). The removal of item #B15b j (grilling/BBQ; Cronbach's α =.731) and k (putting together a pre-made meal; Cronbach's α =.745) would lead to a small improvement of the Cronbach's alpha value, however, this improvement was not deemed large enough. The family meal scale (#C2, #C3) was also found to have an acceptable level of internal consistency (pre-test T1 Cronbach's α =.776, and pre-test T2 Cronbach's α =.823). The removal of item #C20c would lead to a small improvement of the Cronbach's alpha value (Cronbach's α =.779) for the family meal scale, however, the effect of removing this item from the scale was not deemed large enough.

Phase 5: Parent Survey and Follow-Up Interview

Methods

In order to assess face validity and test-retest reliability of the parent survey, those parents who provided a phone number on the consent form agreeing to be contacted for a follow-up interview were called ($n = 20$; see Appendix Q for the parent follow-up interview script). The interviews were conducted following all procedures with their children and parents were asked questions, such as *Why is dinner important to your family?*; *What do you allow your kids to do during meal preparation?*. Further, think aloud, probing, and paraphrasing techniques (Willis, 1994) were employed during the phone interview. Approximately 21% of parents were contacted for follow-up, which is

similar to a study by Jago et al. (2011) who contacted 25% which gave the researchers a more accurate representation of both parent's and children's views. Responses to the Kinect-Ed Parental survey (T1) were then compared with the responses to the parent follow-up interview (T2). The approximate time between T1 and T2 was 6 weeks.

Participants

A total of 20 parents were contacted for follow-up via phone interviews (out of a possible 57 parents who left a phone number). Two parents had 2 children in the study, thus representing 22 parent surveys.

Results

Face Validity. The frequency of family dinners was found to be in good agreement between the parental survey and the follow-up interview ($r=0.798, p<.001$), and no significant difference was found between T1 and T2 ($t(21)=1.000, p=.329$). In total, family dinner frequency of 4 participants differed from T1 to T2 (i.e., 1 participant changed from 3-5 days per week at T1 to 6-7 days per week as T2, and 3 participants changed from 6-7 days at T1 to 3-5 days at T2). Parent's comfort level with having their children in the kitchen was also found to be in good agreement between Parental survey and follow-up interview ($r=.733, p<.001$) and no significant difference was found between T1 and T2 ($t(21)=1.449, p=.162$). Responses to the parental survey and follow-up interview questions #2 and #3 were found to be highly related with 70% ($n =14$) of the responses matching. The other 30% ($n =6$) of responses were found to be similar; however, the parents did leave out some information on the parent survey that was revealed during the phone interview.

Internal Consistency Reliability. Based on the paper-based survey ($n=134$), the family meal scale (#4) was found to have a questionable level of internal consistency (Cronbach's $\alpha=.681$). The removal of item #4g would lead to a small improvement to the Cronbach's alpha of the family meal scale (Cronbach's $\alpha=.687$), however, the effect of removing the item was not considered large enough.

Discussion

The development, validity, reliability, and internal consistency of the Kinect-Ed survey tools were conducted with an expert panel and a sample of young adolescents and their parents from Windsor-Essex County, Ontario, Canada. The development of the surveys was based on existing tools used in other nutrition and food behaviour studies (Project EAT, FBQ, Cooking with Kids, and NHANES) and the current objectives of the Kinect-Ed program. Although other surveys and measurement tools have asked questions related to food preparation frequency, cooking skills and family meal dynamics, the current study is believed to be the first set of surveys to combine all these dimensions.

Validity

Content validity was established using a panel of experts ($n=7$) which was similar to a number of studies that examined the content validity of surveys (Gower et al., 2010; Li & Levy-Milne, 2008; Schembre et al., 2009). As a result of the expert panel review there were 6 improvements made to the Kinect-Ed parent survey, 17 to the Kinect-Ed pretest survey, and 10 to the Kinect-Ed post-test survey, with changes reflecting questions which appear on both surveys. The improvement mainly consisted of wording changes and/or the addition of response options.

Face validity was established using group cognitive interviews which resulted in 23 changes to the pre-test survey and 6 changes being made to the post-test survey. The improvements included rewording of questions and options, addition or removal of options, and the addition of questions. Cognitive interviews are a common way of testing the face validity of nutrition and food behaviours surveys and tools (Hanning et al. 2009; Li & Levy-Milne, 2008) as it allows researchers to measure the comprehension of the survey tools among the target audience. As a result of the content and face validity methods, the Kinect-Ed surveys were edited to reflect the recommendations of the participants improving the overall comprehension and content of the surveys.

Reliability

Test-retest reliability was completed among young adolescents who completed the pre-test and post-test surveys twice one week apart (pre-test $n=129$, post-test $n=107$). The *Demographics* section of the Kinect-Ed pre-test was found to be highly reliable for all questions within this section except for question #A6b (adults home b/t 5-7 pm) which is a result of 39 participants changing their answer between T1 to T2, with 17 participants changing their answer from *Almost always* at T1 to *Usually* at T2. It is not understood why participants changed their answer from T1 and T2, however, a change in schedules (e.g., shift work) may have occurred during this time period. Responses for question #A5f (What adults live with you the majority of the time?- Brothers/Sisters) at T1 and T2 also resulted in a low r value ($r=.565$) as 25 participants changed their answers at T1 and T2. It is believed participants may have not fully read and/or understood that the question was asking about *adult* brothers and sisters (and not just any siblings). Therefore, it is

recommended that the option be changed to read *Adult Brother/Sister* for better clarification in the future (see Appendix R for the final version of the Kinect-Ed surveys).

The *Food Preparation* section of the Kinect-Ed pre-test survey was found to be reliable for all questions, except #B15b (food preparation technique scale). This might be a result of the number of options presented (Breakfast, Lunch, Dinner, Do Not Do) for each preparation technique leading to greater variability in responses between T1 and T2. It is, therefore, recommended that this question be changed to include a *Do* and *Do Not Do* option as opposed to the breakfast, lunch, and dinner options. This would effectively create a scale out of 11 points instead of 33, which might lead to an increase in the test-retest reliability of the question (higher r and insignificant t values) as participants may be more tentative when answering the question with the reduction of options decreasing the variability between responses. When analyzing the question out of 11 opposed to 33 a slightly higher correlation was found ($r=.753$ vs. $r=.724$). Both analyses did result in a small effect sizes (Cohen's $d=.27$ and $.20$) suggesting low practical significance. Further, it is recognized that some techniques are not necessarily appropriate at meals (e.g., BBQ/grilling at breakfast) so the reduced number of options (*Do* and *Do not do*) may help the respondents and will provide more meaningful results. Interestingly, the majority of the survey questions which asked "in the past week..." (e.g., #B5 *How many times did you help shop for groceries*, #B14 *I didn't prepare food in the past 7 days*, #B15a *I was involved in making food during...*) were found to have lower correlation values between T1 and T2 ($r=.479$, $.472$, and $.435$ respectively), then the other questions. The low correlation values are thought to be due to the difference in family schedules from week

to week (as T1 and T2 theoretically ask about a different time frames) affecting the frequency that participants were involved in food preparation and grocery shopping.

The *Family Meal* section was found to be reliable among pre-test T1 and T2 for family meal frequency and family meal behaviours and attitudes. A few of the individual items on the family meal behaviour and attitudes scale did produce significant *t* values between T1 and T2 scores, however, the family meal scale will be evaluated as a whole (of the 56) and not by the individual items, which was found to be reliable.

A total of 19 identical questions appeared on both the Kinect-Ed pre- and post-test surveys. The majority of the questions from the food preparation section revealed higher correlations on the post-test, compared to the pre-test. This increase is likely a result of repetitive exposure to the surveys and participants becoming familiar with the questions and recall their response due to the short time period between T1 and T2 (Loyo, 2009). The increases could also be due to participants not regularly thinking about their involvement in food preparation/family meals and completing the surveys could have made them more aware of these behaviours.

Sandi's Visit section from the Kinect-Ed post-test survey was found to be reliable for all questions except #C3 (*How much did Sandi Richard motivate you to start preparing/making meals?*). This is likely attributed to the 16 participants (~15% of total sample) who changed their responses from a "3" at T1 to a "2" at T2, as well as 21 other participants whose responses varied between the four options. These changes indicated that the individual's motivation may have changed between T1 and T2, as 12 participant's motivation increased over that time period and 25 participant's motivation decreased. However, this could likely be a function of T2 being two weeks after Sandi

Richard's presentation, as it has been shown that individuals are likely to decrease their motivation after participating in an one-time intervention (Parks et al., 2008; Wilson, Jones, McClish, Westerberg, & Danish, 2012).

There were a small number of participants who completed Section E (Did cook one of Sandi Richard's recipes). Ten participants cooked a recipe at T1 and 13 T2 (7 of these individual filled it out at both T1 and T2). Due to the small number of participants who completed the survey twice ($n=7$), some questions were found to be unreliable. Changes in responses from T1 to T2 resulted in non-significant Pearson and significant t values. For example, for question #D2 (What did you get to do), 5 of the 8 options resulted in non-significant Chi-square (Phi coefficients ranging from .400 to 1.000). However upon further investigation, only 1 to 2 participants changed their response from T1 to T2.

All of the questions in Section F (*Didn't cook one of Sandi Richard's recipes*) were found to be reliable except for question #F1e (I didn't think I could do it well enough). This is likely due to small number of respondents for this item as only 10 participants responded *yes* (post-test T1:3 and post-test T2:8) with only one participant answering *yes* at both T1 and T2. The difference is likely due to participants change in self-efficacy between T1 and T2.

The self-efficacy scale for cooking question (#B11) was found to have a good level of internal consistency (Cronbach's α T1= .811, and T2= .875). The internal consistency of the self-efficacy scale was found to be higher than values cited by Lohse et al. (2011) study which used a very similar 8 item scale question (Cronbach's α T1= .74, and T2= .78). The internal consistency values reported by Lohse et al. (2011), were

likely lower due to a younger sample (grade 4 and 5) and slightly different response options (*YES!*, *Yes*, *No*, *NO!* compared to the Kinect-Ed: *Very Hard*, *Hard*, *Easy*, *Very Easy*) as the time period between T1 and T2 was similar for both studies. The food preparation technique scale was found to have an acceptable level of internal consistency (Cronbach's α T1= .725, and T2= .761), no items were deleted from this scale although the removal of items #B15b j (grilling/BBQ) and k (preparing a premade meal) could result in a higher Cronbach's α . The decision to not remove any items from the scale at this point was also due to the revisions made to this question (change option to Do and Don't Do) in order to see if this has any effect on the scale. Lastly, the family meal behaviours and attitudes scale was also found to have an acceptable level of internal consistency (Cronbach's α T1= .776, and T2= .823). As a result of the internal consistency analyses, none of the items needed to be removed from the scales as all items were deemed to be necessary.

Parent survey. A total of 20 parent interviews (telephone), representing 22 participants were compared to the corresponding 22 Kinect-Ed parent surveys. This sample represented 21% of the participants, similar to a study by Jago et al. (2011), who found that by contacting approximately 25% of parents allow researchers to have a more accurate representation of both the parent's and child's views. The two methods of data collection yielded similar results as the frequency of family dinners as well as parent's comfort level with having their children in the kitchen was found to be related. This is likely due to the different reporting methods accurately revealing similar results.

Future Directions

In the future, the Kinect-Ed surveys will likely be computer-based as opposed to paper-based. This will likely limit the participant's response burden as question can be more streamlined (i.e., depending on responses to certain questions further questions will/will not be asked). The reliability and internal consistency of the Kinect-Ed surveys should not change as a result of going electronic, as comparisons between paper- and computer-based nutrition surveys indicate no difference in responses (Haggler, Norman, Radick, Calfas, & Sallis, 2005).

It is also important to compare similar questions which appear on the Kinect-Ed surveys to ensure they are rendering the same results. Questions which may be of interest to compare include #B6 (*In the past week how many times did you help prepare/make food for dinner?*) with #B15a (*Thinking about the past 7 days how often were you involved in preparing/making dinner? total of the 7 days*). This is important in order to ensure that the different questions are yielding the same results and are not simply repeating the same thing (thus increasing the length of the survey). For example, the study by Chu et al. (2012) based the frequency of participants involvement in meal preparation on one question (*How frequently do you help prepare or cook food at home?*) which participants selected one of the five responses ranging from *never or almost never* to *several time a day on most days*. Opposing, the Kinect-Ed surveys have multiple questions which ask about the individuals' involvement in food preparation as well as the techniques used, to give an overall all picture of the types of foods they are preparing. Chu et al. (2012), did not distinguish between cooking from scratch (e.g., peeling vegetables) and/or cooking

pre-made meals (sticking a pizza in the oven, warming leftovers, etc.), which we feel is an important distinction when cooking.

Lastly, the surveys have been tested for content and face validity through the use of an expert panel and cognitive interviews as well as test-retest reliability. However, in the future, the Kinect-Ed surveys should be tested for other forms of validity (e.g., criterion, convergent, discriminate) and/or reliability (e.g., inter-rater, parallel). For example, comparing parallel responses from the parental and child surveys are necessary to ensure that similar responses are describing the same event (e.g., family meals and involvement in food preparation). Furthermore, having the participants demonstrate cooking skills to researchers and/or directly observing family meals could also be done to ensure other forms of validity and/or reliability.

Limitations

This study is not without limitations. As with any self-report nutrition data there is always the influence of social desirability. Since the survey answers were anonymous and the questions were non-invasive (e.g., the surveys did not ask participants to report what kinds of food they were eating), the social desirability among participants was deemed low. Interestingly, among the children/adolescents, cooking frequency/preparation is clearly not something that is seen as socially (un)desirable, as many participants often made comments aloud at either end of the spectrum (e.g., some referred to hating cooking, while others told everyone around them what they cooked yesterday). However, in order to minimize the social desirability on the parent survey, several of the expert's suggested to phrase one of the questions negatively to remove any guilt and hopefully decrease the parent's social desirability when answering the question (i.e., #4: Many

parents often say they do not like having their children in the kitchen because of the extra time involved, the mess, and sometimes their safety. What are some reasons why you are/aren't comfortable with having your children in the kitchen?). This question did result in some feedback which might be considered as socially undesirable as parents responded with answers such as "I definitely do not like having them near the stove, I am paranoid" and "I am not comfortable with him using a knife, and don't let him use the gas stove". It should be noted, however, that parents did not shy away from answering how often they consumed meals as a family as 9 out of the 20 (45%) parents said they eat meals together on 1 to 5 nights a week and 11 (55%) said they eat together on 6 to 7 nights per week. Further, compared to previously reported family meal frequency among Canadian children/adolescents (Woodruff et al., 2010b), the frequency of family meals in the current study is slightly lower (55% vs. 65% who reportedly consume meals on 6-7 days/week), which may suggest that phrasing the follow-up interview question in a social undesirable manner limited the parents social desirability.

It is possible that having similar questions on a scale (e.g., phrased in the positive vs. negative or all positive/negative) will inflate the reliability of the scale. Since some of the scales on the Kinect-Ed survey ask similarly worded questions, it is possible for this to be the case. However, when the scale questions were analyzed for internal consistency reliability, the analysis revealed that all items were considered to be relevant to the scale and did not require removal.

With all program evaluations there is a concern with ceiling effects and the ability of a research tool to measure changes in behaviours. Since the current research does

suggest that there frequency of food preparation among adolescences is rather low an intervention can only improve this behaviour.

The parent survey was filled out at the time of parent consent (before the child took part in the intervention/study); however, as part of the research methodology some of the questions on the follow-up interview pertained to their child's/family experience with the Kinect-Ed program. As a result, the parents were contacted after their child had completed the intervention/study, which could have affected the way the parents answered in terms of how comfortable they were with their child in the kitchen as well as how interested their child was in cooking. The difference in time period between data collections was evident as four families indicated that their frequency of family meals increased/decreased as some families schedules had changed since filling out the parent survey (i.e., one mother indicated that her family tends to eat together on 4-5 days a week now due to their child's soccer schedule where at the time they filled out the parent survey the family was eating together 6-7 days/week).

Conclusion

The Kinect-Ed surveys were validated for content validity using an expert panel, face validity among young adolescents, and tested for test-retest reliability and internal consistency. The Kinect-Ed Parent survey was also tested for test-retest reliability and found to be reliable. The test-retest values indicated that the Kinect-Ed surveys can produce relatively consistent results over time. Other forms of validity and reliability should be tested in the future; however, with a few improvements made to the Kinect-Ed surveys, the surveys have been deemed to possess content and face validity as well as

test-retest reliability and can be used in upcoming studies/evaluations of the Kinect-Ed program.

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REVIEW OF LITERATURE

Child Obesity

Childhood obesity is a worldwide health epidemic, in which the rates have significantly increased over the past few decades (Wang, 2001; World Health Organization, 2000). In Canada, obesity rates have nearly tripled over the past 30 years (Ball & McCargar, 2003; Shields, 2005; Tremblay, Katzmarzyk, & Willms, 2002), such that the Canada Health Survey conducted in 1978-79, reported that 12% and 3% of children and adolescents aged 2 to 17 were overweight and obese respectively. Whereas in 2004, the Canadian Community Health Survey (CCHS) found that these numbers have greatly increased with 18% and 8% of children being reported as overweight and obese, respectively (Shields, 2006). This translates to approximately 1.1 million Canadian children and adolescents who are overweight and another half million children that are obese, accounting for more than one-quarter (26%) of children and adolescents (Shields, 2006). Overweight and obesity is more prevalent among males (Shields, 2005) and the prevalence of obesity increases with age (Shields, 2006). It is reported that children from 2 to 5 years have prevalence rates of 21% compared to 29% among 12-17 years (Shields, 2006). Due to the higher prevalence of obesity today (Olshansky et al., 2005) suggests that this might be the first generation which has a lower life expectancy than their parents. To confirm BMI measures, the recent Canadian Health Measures Survey (CHMS) also suggests that today's children are taller, heavier, fatter, and weaker than they were three decades ago (Tremblay et al., 2010).

Overweight and obesity is commonly defined using *Body Mass Index* (BMI; wt (kg)/ht (m²), Health Canada, 2003). The recently adopted World Health Organization

(WHO) Growth Charts (Dietitians of Canada and Canadian Paediatric Society, 2010) is now the current method to assess childhood obesity in Canada. This method uses BMI for age and classifies children and adolescents (aged 5 to 19) as overweight or obese if their BMI greater than the 85th percentile or the 97th percentile, respectively (Dietitians of Canada and Canadian Paediatric Society, 2010).

The burden to the Canadian health care system is hard to quantify as many of the health-related problems of childhood obesity do not present themselves until later in adulthood. However, evidence suggests that obesity-related health conditions such as type II diabetes and hypertension (which have previously only been seen in adults) are rising among children and adolescents (Ball & McCargar, 2003; Veugelers & Fitzgerald, 2005). It is also thought that being overweight or obese during childhood and adolescence puts those individuals at higher risk of developing other physiological problems such as cardiovascular disease, osteoarthritis (Ball & McCargar, 2003), some cancers (such as endometrial), sleep apnea, and gallbladder disease (Dietz, 2004). Moreover, overweight children and adolescents are also affected by psychosocial problems. Wang, Wild, Kipp, Kuhle and Veugelers (2009), conducted a national longitudinal study on 10 and 11 year old Canadians and reported low self-esteem at baseline was more prevalent among overweight and obese children than their normal weight peers and was persistent at follow-up 4 years later.

Childhood obesity also thought to track into adulthood (Dietz, 1998; Freedman, Khan, Dietz, Srinivasan, & Berenson, 2001). A longitudinal study by Herman, Craig, Gauvinn, and Katzmarzyk (2009), tracked 374 participants' BMI and leisure time physical activity over 22 years from youth into adulthood and reported that although the

number of participants who were overweight or obese at baseline was small, the results suggested that ~83% of overweight youth remained overweight as an adult making the odds of continuing to be overweight in adulthood 6.2 times greater.

Energy balance. Although there are many determinants to physical activity and nutritional behaviours, body weight is largely a product of energy intake (nutritional calories) and energy expenditure (physical activity). A positive energy balance occurs when an individual pairs excess energy intake with lower energy expenditure. As this positive energy balance persists over long periods of time the individual tends to gain weight.

Physical Activity and Sedentary Behaviours

Over the past few decades, the physical activity rates of Canadian children and adolescents have dramatically declined (CFLRI, 2009) and a sedentary lifestyle has been adopted (Tremblay et al., 2011). As a result of this physical inactivity crisis, children's overall fitness has significantly deteriorated since the 1981 Canadian Fitness Survey. Tremblay et al., (2010) illustrated that children fitness scores for muscular strength, muscular endurance, and flexibility, had all decreased since 1981, whereas BMI, waist circumference, and adipose tissue had increased. Physical activity habits formed during childhood and adolescence is thought to track into adulthood (Craigie, Lake, Kelly, Adamson, & Mathers, 2011) making it very important to promote physical activity at a young age while the behaviours are being formed.

Sedentary behaviour is currently defined as any waking behaviour characterized by an energy expenditure ≤ 1.5 METS while in a sitting or reclining posture (Tremblay, 2012). A metabolic equivalent of a task (MET) is used to quantify energy expenditure of

activities, with 1 MET equal to the resting metabolic rate. Sedentary behaviours include activities such as television viewing, playing computer and video games as well as surfing the internet. According to the Canadian Physical Activity Guide (CPAG) released in January of 2011 (CSEP, 2011), it is recommended that Canadian children and adolescents (aged 5-17) should accumulate 60 minutes of moderate to vigorous activity (MVPA) daily (MVPA = ≥ 3.5 METS). However, objectively measured (rather than self-report) physical activity and sedentary behaviour using accelerometers, determined that only 7% of Canadian children and adolescents are currently meeting the proposed CPAG guidelines (Colley et al., 2011). This is largely due to the fact that Canadian children and adolescents were found to spend an average of 8.6 hours (or 62%) of their daily waking hours engaged in sedentary activities (Colley et al., 2011). Sedentary lifestyles in children and adolescents have been highly correlated with obesity (Rennie, Johnson, & Jebb, 2005; Shields & Tremblay, 2008). The Colley et al. (2011) study also revealed that boys tend to be more active than girls, at all ages, accumulating 11 to 14 minutes per day more MVPA. Boys also accumulated more steps in a day (on average 12,100 steps per day) than girls (10,300 steps per day), yet both step counts fall below the recommended 13,500 per day.

Katzmarzyk and Janssen (2004) estimated the cost of physical inactivity in Canada to be \$5.3 billion. Further, in 2005, obesity-related chronic conditions accounted for \$4.3 billion in direct and indirect costs (Public Health Agency of Canada, 2010). It is evident from these calculations that the consequences of children and adolescents not meeting the current physical activity recommendations are greatly influencing obesity rates, ultimately putting a huge strain on the Health Care System in Canada. Participating

in regular physical activity can help individuals reduce the risk of chronic diseases and assist in maintaining a healthy body weight which could ultimately result in a decrease of obesity-related costs to the Health Care system (Katzmarzyk & Janssen, 2004).

Nutrition

The nutrition habits of Canadians have also likely contributed to the obesity epidemic. The 2004 Canadian Community Health Survey, Cycle 2.2 (CCHS 2.2), was the first National survey since the early 1970's which examined Canada's eating habits. A 24-hour diet recall was used to examine what participants had eaten on the previous day, when they ate, and where the food had been prepared (Garriguet, 2006). The results of the CCHS 2.2 were then compared to 1970-1972 Nutrition Canada Survey results, which surprisingly reported that the average caloric consumption had not increased over the past 30 years and in some population groups the average intake had actually declined (Garriguet, 2006). However, the likely problem relates to the types of foods from which the calories are coming (Garriguet, 2006). The CCHS 2.2 reported that *grain products* were the top energy provider for those aged 4-18 years, supplying 31% of the daily calories, followed by the *other foods* (according to Canada's Food Guide to Healthy Eating) category which provided 22% of the daily calories (Garriguet, 2006). Further one-third of children aged 4 to 9 years did not meet the recommended two servings of *milk products* per day, and 70% of children between the ages of 4 and 8 consumed less than 5 servings of *vegetables and fruit*. For example children aged 9 to 13 (62% of girls and 68% of boys) did not meet the minimum number of servings for *vegetables and fruit* (Garriguet, 2006). The lack of vegetables and fruit consumption is concerning since

studies have found that consuming less than five servings of vegetables and fruits per day put children at a significantly greater risk for becoming obese (Shields, 2005).

Overall diet quality of children and adolescents is concerning (Garriguet, 2006; Veugelers, Fitzgerald, & Johnston, 2005; Woodruff & Hanning, 2010) and is likely impacting energy balance. Researchers examining food intake and behaviours found that not only are children not getting enough fruits and vegetables they are also over consuming foods high in sugar, fat and sodium (Hanning et al., (2007). Regularly consuming low-nutrient-dense-foods (LNDF) was associated with high energy intakes due to their inability to create a sense of satiety and resulting in a greater positive energy imbalance (Johnson, Mander, Jones, Emmett, & Jebb, 2008).

Food Behaviours

While individuals do not necessarily consume *nutrients* as described above, many health professionals and researchers focus on food behaviours to better understand poor diet quality. It is important to practice healthy food behaviours at a young age as food behaviours formed during adolescence may persist and/or track into adulthood (Nicklas & Johnson, 2004; Story, Neumark-Sztainer & French, 2002). This section will review beverage consumption, snacking, meal skipping, and fast food consumption in order to better understand current food behaviours among children and adolescents.

Beverage Consumption

Unsweetened beverages such as water, milk and 100% fruit juice account for approximately 85% of beverages consumed by children aged 1 to 3 (Garriguet, 2007). The amount of unsweetened beverage consumption decreases to approximately 60% for those aged 14 to 18 years, with an increase in sweetened beverages (e.g., which includes

soft drinks, and fruit drinks containing less than 100% fruit juice; Garriguet, 2007). The Canadian Living Foundation-Breakfast for Learning (2007) Report Card on Nutrition for School Children reported that, on average, 29% of Canadian children and adolescents (aged 4 to 18 years) consume one or more soft drink(s) a day and 40% have two or more servings of fruit juice day.

The consumption of sweetened beverages tends to increase with age, with the largest consumption occurring with the 14 to 18 age group (Garriguet, 2007). The CCHS 2.2 reported approximately 40% of all beverage consumption for those aged 14-18 years comes from the *sweetened beverage* category with males consuming significantly more sweetened beverages than females (Garriguet, 2007). Quantifying this, males (4-18 years old) consume a mean of 510 mL of soft drinks and 470 mL of fruit drinks a day compared to females (4-18 years) who report consuming 390 mL of soft drinks and 415 mL of fruit drinks per day (Garriguet, 2008).

Based on the data from the CCHS 2.2, children and adolescents consume a significant amount of added sugars in the form of sweetened beverages, as beverages makeup almost 20% of the calories consumed by children and adolescents (Garriguet, 2007). The increased consumption of drinks containing added sugars has been linked to weight gain and high BMI in both children and adolescents (Ludwig, Peterson, & Gortmaker, 2001), and is currently being used as a popular health promotion strategy (e.g., reduction of sweetened beverages) for children and adolescents. Finally, Malik, Schulze, and Hu (2006) conducted a systematic literature review ($n = 30$) examining the relationship between the intake of sugar sweetened beverages and weight gain and concluded that the studies provide strong evidence for the role of intake of sugar

sweetened beverages in the promotion of weight gain and obesity in children and adolescents.

Snacking

Snacking is commonly defined as small amounts of food consumed in between meals, and can be associated with poor health outcomes and dietary patterns in children and adolescents (Garriguet, 2007). Even though sweetened beverages and desserts remain the major snacking sources (Piernas & Popkin, 2010), children and adolescents tend to select snack foods based on their taste rather than their nutrition value, resulting in the consumption of salty and crunchy foods over healthy alternatives (Cross, Babicz, & Cushman, 1994). Although there is limited evidence, it is thought that snacking may be associated with less frequent consumption of and/or smaller meals, which may be harmful to overall nutrient intake since regular meal patterns have been associated with better nutrient intakes and healthier/more diverse food choices (Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003).

The CCHS 2.2 reported that children and adolescents snacks accounted for more calories (27% of total energy) than breakfast (18% of total energy) and about the same amount of calories as lunch (24% of total energy; Garriguet, 2007). The amount of calories from snacks saw the greatest increase in the 14-18 year old age group (compared to younger children), with adolescent males (30% of total energy) consuming more than adolescent females (28% of total energy; Garriguet, 2007). While it is concerning that more energy intake is coming from snacks than breakfast, it is perhaps more concerning that more than 41% of the total energy reportedly came from *other* foods (e.g., foods which are high in sugar and fat) and only 13% of calories from snacks are consumed

from vegetables and fruits (Garriguet, 2007). Further Piernas and Popkin (2010), examined trends in snacking among American children over the past 30 years, and found that there have been significant changes in snacking behaviour (e.g., children consumed 1.11 more snacks per day in 2003-2006 than they did in 1977-1978), such that children consumed approximately three snacks per day, resulting in 27% of the caloric intake coming from snack foods (Piernas & Popkin, 2010). Changes in snacking behaviours, including the type of snack foods consumed, are likely impacting the dietary intakes of children and adolescents, which may be ultimately influencing body weight.

Meal Skipping

Meal skipping, commonly thought to control total energy/food intake, is frequently reported among adolescents. A large study ($n=1826$) of grade 9 and 10 students from Alberta, reported that breakfast, lunch and dinner was skipped by 27%, 14%, and 7% of participants respectively (Woodruff, Hanning, Lambraki, Storey, & McCargar, 2008). Breakfast is the most commonly skipped meal (Deshmukh-Taskar, Nicklas, O'Neil, Keast, Radcliffe, & Cho, 2010; Woodruff et al., 2008), yet irregular meal times are becoming more common.

Meal skipping is often reported by more females than males (Cohen, Evers, Manske, Bercovitz, & Edward, 2003; Woodruff et al., 2008), and among overweight/obese individuals compared to normal weight (Berkey, Rockett, Gillman, Field, & Colditz, 2003; Woodruff et al., 2008). Adolescents who have consistent meal patterns (e.g., consuming three meals per day) are found to be more likely of a normal weight than those with inconsistent meal patterns (Siega-Riz, Carson, & Popkin, 1998). Female adolescents often report a desire to be thinner (French, Story, Downes, Resnick,

& Blum, 1995), resulting in the use of dieting and skipping meals in order to control their calorie intake and body weight (Jones, Bennett, Olmsted, Lawson, & Roding, 2001; McVey, Tweed, & Blackmore, 2004). Meal skipping and dieting is a concern among adolescents for health professionals, as it has been associated with a poor body image (Woodruff et al., 2008) and other potential harmful health behaviours such as binge eating (French et al., 1995) as well as drug, alcohol and tobacco use (French et al., 1995).

Lastly, meal skipping is potentially problematic due to low nutrient intake and/or overall diet quality. For example, participants who skipped breakfast had a worse overall diet quality compared to those who consumed breakfast, suggesting that individuals do not make up the missing nutrients at other meal or snack times (Woodruff et al., 2008). Unhealthy meal patterns, such as irregular meal consumption, may influence total energy intake and/or metabolic rates, ultimately influencing body weight (Boutelle, Neumark-Sztainer, Story, & Resnick, 2002).

Fast Food Consumption

Busy schedules of families have led to individuals consuming more fast food and meals outside the home (Jekanowski, Binkley, & Eales, 2001; Neumark-Sztainer et al., 2003). The amount of fast-food consumed among children and adolescents increases with age with the 14-18 year old age group consuming the greatest amount (Garriguet, 2006). For example, according to the CCHS 2.2, one-third of 14-18 year olds consumed food prepared from a fast-food restaurant on the day prior to the food survey compared to less than a quarter of 3 to 13 year olds (Garriguet, 2006). Data from the CCHS 2.2 also reported that 40% of individuals who consumed food from a fast-food restaurant were more likely to choose unhealthy food options like pizza, hamburgers, hotdogs and

sandwiches (Garriguet, 2006). Moreover, a study by Larson, Neumark-Sztainer, Laska, and Story (2011) examined the dietary patterns of foods consumed away from home in 2287 young adults as part of the third wave of a cross-sectional observational study, and reported that young adults consumed food from a restaurant three to four times per week, which are more likely in the form of fast food outlets than full service restaurant. Lastly, the prevalence of consuming foods from outside the home is more commonly reported among adolescent males ages 9 to 13 (55%) and males and females 14 to 18 (44%) (Garriguet, 2006).

The portion sizes of foods and beverages consumed at fast-food restaurants tend to be larger and higher in energy (Nicklas, Baranowski, Cullen, & Berenson, 2001). Furthermore, food consumed outside the home, as opposed to food consumed and prepared from food inside the home, are often higher in fat, sugar, and salt (Lin et al., 1999). Studies have revealed that higher energy intakes are reported on days when adolescents consume fast food compared to days when no fast food is consumed (Bowman, Gortmaker, Ebbeling, Pereira, & Ludwig, 2004; Paeratakul, Ferdinand, Champagne, Ryan, & Bray, 2003). French, Story, Neumark-Sztainer, Fulkerson, and Hannan (2001) reported that participants ($n=4746$ grade 7-12 students) who consumed food at a fast food restaurant three or more times during the week prior to the study had total energy intakes which were 40% (males) and 37% (females) higher than those who reported never consuming food at a fast food outlet in the week prior.

Consumption of fast food and food prepared outside the home, may increase and/or influence body weight. For example, participants who frequently used fast food restaurants that serve hamburgers and french fries were at higher risk for

overweight/obesity as well as a higher intake of sugar-sweetened beverages, total energy, total fat, and saturated fat, along with a lower intake of healthy foods and key nutrients compared to those that do not regularly consume fast food (Larson et al., 2011). A longitudinal study by Niemeir, Raynor, Lloyd-Richardson, Rogers, and Wing (2006) found that increased frequency of fast food consumption as well as breakfast skipping during adolescents resulted in increased weight gain during the transition to adulthood. In terms of diet quality, consuming meals within the home may provide better nutrition, possibly due to greater control over types of foods served, portion sizes, and cooking methods.

Family Meals

Today, the image of a blissful family eating together at the dining room table may be replaced by grabbing something on the go, popping something into the microwave to enjoy in front of the television, or perhaps each individual family member consuming something different at different times during the evening. Given the time management and nutrition difficulties that families face in today's society, Ontario's Chief Medical Officer of Health Report, *Healthy Weights, Healthy Lives* (Ministry of Health and Long Term Care, 2004) recommended family meals as a means to promote, achieve, and maintain healthy body weights for both parents and children. However, very little Canadian research and/or evidence was present at the time of the recommendation and very little research in this area has been done since. None the less, many feel it seems rather simplistic to recommend more family meals to improve dietary intake and health body weight during childhood and adolescence, particularly given the complexity of today's families. Therefore, this next section will review the definition and prevalence of

family meals, family meals and food intake, family meals and other behaviours, and the family meal environment in order to better understand this recommendation.

Definition and Prevalence

Family meals have a unique and different meaning to each individual and family, often leading to difficulty in creating a universal definition to describe family meals. Due to the large variance in the family meal experience between individuals and families, researchers have struggled with defining family meals, resulting in various studies choosing to examine dinner specifically (e.g., Gillman et al., 2000; Veugelers et al., 2005; Woodruff & Hanning, 2009a) while others have included breakfast or all meals (e.g., Boutelle, Lytle, Murray, Birnbaum, & Story, 2001; Eisenberg et al., 2004). Moreover, different family structures and make-ups create difficulty in defining who must be in attendance in order for a meal to be considered a family meal, leading some researchers to classify meals as family meals when one parent is present (Videon & Manning, 2003; Woodruff & Hanning, 2009a) and others when all or most of the family living in a house is present (Neumark-Sztainer et al., 2003; Neumark-Sztainer et al., 2004).

Research has indicated anywhere from one-quarter to two-thirds of children and adolescents consume family meals on 5 to 7 days per week (Neumark-Sztainer et al., 2003; Neumark-Sztainer, Larson, Fulkerson, Eisenberg, & Story, 2010; Woodruff et al., 2010). For example, 25-70% of children and adolescents report consuming meals with their families regularly (five or more meals per week), compared to 11- 44% who report consuming meals on two or fewer days per week (Neumark-Sztainer et al., 2003; Utter et al. 2008; Veugelers, Fitzgerald, & Johnston, 2005; Videon & Manning, 2003; Woodruff & Hanning, 2009a). No difference in prevalence seems to exist between male and female

children/adolescents (Woodruff, Hanning, McGoldrick, & Brown, 2010), however, the frequency of family meals seems to decrease with increasing age (Gillman et al., 2000) likely as a result of adolescents gaining autonomy from the family.

Family Meals and Food Intake

Woodruff and Hanning (2008) suggest that consuming meals as a family during childhood and adolescents has a strong influence on eating behaviours and attitudes, as the family has the potential to influence and model the (1) types of foods consumed, (2) individual's food preferences and intake and (3) overall nutrition knowledge. The family plays a very important role in determining children and adolescent dietary patterns, as parents influence the food availability and eating practices in their household (Neumark-Sztainer, Story, Perry, & Casey, 1999; Woodruff & Hanning, 2008).

More specifically, studies have illustrated that eating dinner at home with family is associated with increased nutrition among children and adolescents (Neumark-Sztainer et al., 2003; Veugelers et al., 2005; Woodruff et al., 2010). For example, a study by Gilman et al. (2000), revealed that as family dinner frequency increased there was a greater consumption of fruits and vegetables as well as several beneficial nutrients such as fibre, folate, calcium, iron, and vitamins B₆, B₁₂, and E among 16,202 children and adolescents aged 9-14 years. Along with the increase in healthy food consumption, increasing family dinner frequency also lead to a lower consumption of saturated and trans fat as well as soda and fried foods, with a decrease in the glycemic load (Gilman et al., 2000). Further, a study by Veugelers et al. (2005) found that Canadian children who eat dinner with their families at least three times per week were at a decreased risk of being overweight or obese. However, conflicting results exist for the influence of family

meals on body weight, such that associations often exist cross-sectionally but not longitudinally (Fulkerson et al., 2008; Taveras et al. 2005; Utter et al., 2008).

Family meals may also benefit other health behaviours. For example, Woodruff and Hanning (2009a) reported that family meals were associated with decreased soft-drink consumption, consuming breakfast on the day of the survey, an absence of a high body weight concern, and an increased self-efficacy for healthy eating at home with family and during social times with friends. Further, research has suggested that eating meals as a family may protect children and adolescents against dieting and disordered eating behaviours (Neumark-Sztainer, Wall, Story, & Fulkerson, 2004) and positively affects psychological well-being (Eisenberg et al., 2004). The social setting of family meals seems to discourage unhealthy eating behaviours and secretive eating, as family meals have been negatively associated with extreme and less extreme weight control (males and females; Neumark-Sztainer et al., 2004; Fulkerson et al., 2006), chronic dieting (females; Neumark-Sztainer et al., 2004), bulimia (Ackard & Neumark-Sztainer, 2001; Fulkerson et al., 2006), and concern about a high body weight (Woodruff & Hanning, 2009a).

Family Meals and Other Behaviours

Family meals are not only associated with increased nutrition behaviours, but may also be associated with other health constructs, such as a decrease in high risk behaviour (Fulkerson et al., 2006), better school performance (Fulkerson et al. 2006), and psychological adjustment (Eisenberg et al., 2004) in children and adolescents. For example, family meals have been found to be negatively associated with all high-risk behaviours (e.g., substance abuse, depression/suicide, violence and school problems)

(Esienberg et al., 2004; Fulkerson et al., 2006). A study by Esienberg et al. (2004) found that greater frequency of family meals was associated with significantly lower likelihood of smoking, alcohol and marijuana use as well as low grade point average. This is thought to be due to family meals providing a time where parents are able to have a formal or informal check in with their children allowing them to communicate with one another, enabling parents to become more aware of the child's emotional well-being and daily life (Esienberg et al., 2004). Furthermore, the positive benefits of family meals are likely a result of children and adolescents spending more time at home with family members where they are supervised, resulting in them having less time to be involved in risky behaviours and exposed to peer pressure (Esienberg et al., 2004).

Interestingly, greater family meal frequency is also associated with improved school performance, as participants reported higher motivation to do well along with reporting more hours spent on homework daily (Fulkerson, 2006). Esienberg et al. (2004) found similar results in that greater family meal frequency was associated with decreased odds of male and female participants ($n= 4746$ aged 11-18 years) having a low grade point averages.

Family Meal Environment

Family meals do not always take place at the kitchen or dining room table. While the majority of family meals tend to occur at home (93%), they can also occur at a restaurant/fast-food outlet (5%), or in between locations/ on the run (<1%) (Woodruff & Hanning, 2009b). However, even if family meals take place at home, families may consume the meal in front of the television. Family meal rules such as eating in front of the television may impact body weight due to mindless eating, exposure to unhealthy

behaviours being portrayed on the television, and the exposure of unhealthy food advertisements (Caroli et al., 2004; Halford, Gillespie, Brown, Pontin, & Dovey, 2004; Liang, Kuhle, & Veugelers, 2009). When the television is on during family meals, although the meal is not *chemically* different, it can affect the social environment as it may act as a distraction reducing or eliminating communication and interaction among family members (McDaniel & Tepperman, 2000; Patrick & Nicklas, 2005; Woodruff & Hanning, 2008). Having the television on during dinner is associated with the types of foods consumed during the meal, as children whose families eat dinner in front of the television tended to consume higher amounts of pizza, snack foods, soft drinks, and few fruits and vegetables compared to children who do not consume family meals in front of the television (Coon, Goldberg, Rogers, & Tucker, 2001; Liang, Kuhle, & Veugelers, 2009).

Food Preparation and Cooking Interventions

When parents were asked to rank their most important activities they do with their children, 80% ranked eating dinner as one of the most (or very most) important activities (Mellman & Lazarus Inc., 1991). However, even with the importance of family meals ranked high among parents (Boutelle et al., 2001; Fulkerson et al. 2011), the increased number of dual working parent families (Statistics Canada, 2010) often leads to a time constraints working as a barrier for meal preparation and/or family meals.

Children and adolescents who are involved in food preparation are thought to have better diet quality than their peers (Brown & Hermann, 2005). For example, Larson, Story, Eisenberg, and Neumark-Sztainer (2006), reported that adolescents who prepared foods seven times in the last week also reported consuming at least one-half

serving of fruit and one-half serving of vegetable more than adolescents who never helped with dinner preparation. Moreover, a recent study by Fulkerson et al. (2011) using focus groups of working parents suggested that parents would like their children to be more involved in meal preparation but often avoid involving their children due to the time commitment and mess involved. According to a pilot nutrition and education cooking program study completed in the spring of 2011 among grade 7 and 8 students in Windsor-Essex County, 22% of participants reported they were involved in food preparation at least once a day, and were found to be involved in food preparation 8.27 ± 5.6 times during the past week (e.g., out of a possible 21 times during the week prior to the day of the survey; Woodruff, Richard, Kirby, & Holash, 2012). Similarly, a recent study among 3398 grade 5 students from Alberta, Canada found that approximately 30% of participants reported helping with meal preparation at least once a day while 12.4% reported never helping (Chu et al., 2012). This study (Chu et al., 2012) also revealed that children who were more frequently involved in meal preparation had higher self-efficacy for making healthier food choices and had a higher preference for fruits and vegetables.

Due to the low percentage of children and adolescents who are involved in food preparation, there has recently been a greater focus on cooking interventions geared towards the young adolescent population. However, there seems to be a lack of cooking interventions which are mainly focused on improving overall food preparation skills and increasing frequency of involvement in preparing food. Many of the cooking interventions mainly focus on improving overall diet quality outcomes such as increasing fruit and vegetable consumption or food preferences, rather than an increase in food preparation. For example a study by Cullen, Watson, Zakeri, Baranowski, & Baranowski

(2007) used an interactive multimedia formatted game, based on the Social Cognitive Theory, called *Squire's Quest*. At the conclusion of each session participants selected a fruit- or vegetable-based recipe from a menu and prepared it in the virtual kitchen and then were encouraged to bring it home to prepare. As a result, the *Squire's Quest* intervention was found to be successful in increasing total fruit, juice, and vegetable intake by one serving (Cullen et al., 2007). The *Cook Shop Program* is another example of a cooking intervention aimed at children (ranging from junior kindergarten to grade six), focusing on increasing children's consumption of minimally processed whole grains and vegetables as well as enhancing food preferences and attitudes towards self-efficacy and knowledge about foods (Liquori, Koch, Contento, & Castle, 1998). Participants involved in the *Cook Shop Program* were found to have higher mean food preference scores, greater self-efficacy for cooking, and behavioural intentions to eat plant foods than those in the control groups, as well as a positive effect on knowledge about the curriculum (Liquori, Koch, Contento, & Castle, 1998).

In the literature it is also common for cooking interventions to target low SES and at-risk young adolescents. For example, *Cook it Up!* is an 18 month community-based cooking intervention aimed at at-risk Canadian youth which focuses on food education and building cooking skills. The primary objectives include providing education and increasing skills and awareness of agriculture, healthy eating, food preparation and purchasing skills using hands-on classes (Thomas, & Irwin, 2011). The intervention included hands-on food literacy education, food safety, selection, preparation, and cooking skills as well as, agriculture fieldtrips to learn about locally grown foods. In total 5 participants completed the pre- and post-test cooking skill assessments and it was

reported that most participants increased their cooking skills as well as improved their self-efficacy with respect to cooking skills and nutrition knowledge (Thomas, 2011).

Many recent studies involving cooking interventions tend to include a garden component to the intervention such as the *LA Sprouts* program. *LA Sprouts* is a 12 week after school program which includes gardening, nutrition, and a cooking component for at-risk fourth and fifth grade Latino student in Los Angeles. Throughout the 12 weeks, participants attend 90 minute intervention classes which began with a 45 minute interactive cooking and nutrition education lesson followed by a 45 minute interactive gardening lesson. Participants worked in teams of 5, led by a teacher, to cook the sample recipe that was then eaten in family-style manner. This intervention also provided three separate hour-long parental nutrition and gardening classes (optional) which mirrored what was taught to their children (about 25% of parents participated; Davis, Ventura, Cook, Gyllenhammer, & Gatto, 2011). As a result of this program, researchers reported that the intervention showed promise in changing attitudes about cooking and gardening, increased preference of vegetables, as well as observed improvements in fibre and vegetable intake, and a decrease in diastolic blood pressure and rate of weight gain (Davis, et al., 2011; Gatto, Ventura, Cook, Gyllenhammer, & Davis, 2012).

Recent cooking intervention studies, which mainly focused on participant's involvement in food preparation, have found an increased involvement in meal preparation. For example, Fulkerson et al. (2010) used a two-arm randomized trial to test the feasibility and acceptability of the *HOME* (Healthy Home Offerings via the Mealtime Environment) program for children ages 8-10 years and their families. A seven item questionnaire was used to assess participants' food preparation skills. Participants in the

intervention group were found to be significantly more likely (than those in the control group) to report gaining food preparation skills. Intervention participants were also found to have trends indicating greater parental report of child food preparation skills, and self-efficacy regarding meal preparation. The amount of healthy foods available in the home were also found to indicate trends of higher availability among the intervention families than the control as a greater amounts of fruits and vegetables ($P=0.12$) were available in the home and lower availability of quick, high-fat microwaveable foods ($P=0.11$) and processed meats ($P=0.11$) (Fulkerson et al., 2010). Blake, Smith, Harmon and Beets (2012), conducted a cooking intervention study using among 65 9-12 year olds attending a summer camp. Basic culinary skill classes (twice a week for 5 weeks) emphasized whole grains, fruits, vegetables, and easy to prepare recipes in order to increase family meal time involvement. Participants improved their cooking skills and increased their involvement in family meal preparation, as well as increased their self-efficacy for cooking and improved their eating habits (chose water over pop and less consumption of deserts and fried foods; Blake, Smith, Harmon, &Beets, 2012).

The *Canadian Food Trends to 2020* (Agriculture and Agri-Food Canada, 2005) reported *changing meal patterns* as the third Top #10 Food Trend, suggesting that consumers will become more disassociated with food preparation in the future, through sporadic cooking, quicker meal planning and consumption, and an increase in consuming snack foods. Dougherty and Silver (2007) further argue that scratch cooking skills are being lost among this generation as individuals are turning to quick and easy to (or already) prepare(d) meals. It is known that there are benefits to involving adolescents in food preparation as Laska and colleagues (2011) reported that food preparation in young

adolescence (15-18 years) tracks into adulthood (19 to 28 years). Further, it was reported that participants who enjoyed cooking in their mid-to-late twenties were significantly more likely to participate in food preparation as young adolescents ($P < .01$) (Laska et al., 2011). However, without schools and/or parents teaching young children how to prepare food and meals, and get them motivated to assist in the kitchen, this next generation may be without cooking skills altogether. Thus, using cooking skills to teach nutrition may improve children and adolescents dietary intakes and improve family meal frequency.

Kinect-Ed Program

Sandi Richard, a *Food Network* Host and international best selling author, and Sarah Woodruff, a professor at the University of Windsor, have developed a nutrition and cooking education program called Kinect-Ed. Starting in the fall of 2012, Sandi Richard will begin visiting schools throughout Canada to introduce students to the program. The main goal of the Kinect-Ed program is to motivate Canadian children to get involved in food preparation. The Kinect-Ed program targets young adolescents from grades 6 to 8, and the motivational presentation includes information and interactive demonstrations focusing mainly on the effects of consuming fat, sugar, and salt. The objectives of the Kinect-Ed program include measuring and improving participant's food preparation frequency and techniques/skills, self-efficacy for cooking, family meal frequency, family meal attitudes and behaviours, their motivation to cook based on the Kinect-Ed presentation. After the in-school visit, the program will continue on-line, which will feature weekly discussions and *how to* videos from Sandi Richard, a guest celebrity of the week, nutrient/food analysis software, and moderated asynchronous discussion boards.

The Kinect-Ed program was developed grounded in Social Cognitive Theory (SCT; Bandura, 2004), recognizing the reciprocal relations between the individual and their environment. The interaction between ones' knowledge base, their self-efficacy to change their behaviour, the goals and outcomes they foresee, and the perceived facilitators and obstacles that may influence the change are important considerations (Bandura, 2004). Further, the SCT posits that knowledge acquisition can be directly related to observing others within the context of social interactions, experiences, and outside media influences. In the context of this program, the way in which behaviour, in this case becoming more involved in food/dinner preparation, depends not only on the motivation of the individual to want to cook (or learn how to cook), but also on the social norms of cooking/eating within the family context.

Nutrition Assessment

Today, many researchers collect data on the nutritional status of populations in order to identify public health nutrition-challenges. With the growing awareness indicating the role of nutrition as a risk factor for disease, the data are then used to develop effective intervention programs in order to improve the health of populations through reducing the risk of disease. Nutritional assessment can be defined as “the interpretation of information from dietary, laboratory, anthropometric and clinical studies” (Gibson, 2005, p. 2). The information is then used to determine the nutritional status of individuals or population groups as influenced by the intake and utilization of nutrients. Nutritional assessment systems can be evaluated in one of four ways: surveys, interventions, surveillance, and screening (Gibson, 2005).

Nutrition surveys are often used to establish baseline nutritional data, or to determine the overall nutritional status of the population. National nutrition surveys collect valuable information on the extent of existing nutritional problems, which can then be used to allocate resources within the population, as well as to create policies in order to improve the overall nutrition of the population. Nutritional surveys are also used to evaluate interventions by calculating baseline data before the intervention and again at the end of the intervention. Several large scale nutrition surveys have been conducted in countries around the world over the past decade (Gibson, 2005) such as the CCHS 2.2 (Statistics Canada) which was conducted in Canada in 2004 and NHANES (Centers for Disease Control) in the United States.

Nutrition interventions usually target “at-risk” population subgroups which are identified through nutrition surveys or screening. There are three types of nutrition interventions: supplementation, fortification, and dietary approaches (Darnton-Hill, & Nalubola, 2002; Shrimpton & Schultink, 2002). Monitoring and evaluating nutrition interventions is becoming essential as many health-care program administrators and funding agencies are requiring evidence indicating that programs are being implemented as planned and reaching their target group in a cost-effective manner while overall producing successful results (Gibson, 2005).

Nutritional surveillance involves continued monitoring of selected population groups nutritional statuses. Surveillance studies differ from survey studies as the data are collected, analyzed, and utilized over an extended period of time. Occasionally surveillance studies only involve at-risk subgroups identified in earlier nutrition surveys. However, surveillance studies are often used to identify the possible causes of both chronic and

acute malnutrition and can be used to identify and initiate interventions at the population and subpopulation level. Nutrition screening can be carried out on the whole population, targeted to a specific at risk subpopulation or on select individuals. Currently in Canada, no nutritional surveillance system exists and is currently being demanded by the nutrition field (i.e., dietitians, public health, researchers, etc.).

Lastly, screening tools exist to aid in nutrition assessment of individuals or populations. Methods which are used to characterize each stage in the development of nutritional deficiencies are based on a series of dietary, laboratory, anthropometric, and clinical observations, which can be used separately or combined in order to be more effective (Gibson, 2005). There are numerous dietary methods available, with the objectives and characteristics of the study influencing the one to use (Gibson, 2005). Usually, the results of dietary methods are used to determine whether more invasive methods such as laboratory methods are needed in order to further examine the issue (Gibson, 2005). Dietary methods often involve the examination of knowledge, attitudes, practices, and self-reported food related behaviours (Gibson, 2005). Determining the correct method to use for a study largely depends on the purpose, objectives as well as the population which the researcher is testing.

Methods of Evaluating Food Consumption

Food consumption can be measured at the national, household, and individual level. It is most commonly measured nationally with the use of food balance sheets. Food balance sheets (also called national food accounts, food disappearance data, and/or food consumption level estimates) provide information on the food available for consumption (e.g., the food supply within a country; Gibson, 2005). Data collected does not provide

information on the distribution of the available food supplies within the country, or to the extent to which the food intake of individuals varies within the population (Gibson, 2005). Other ways that food consumption is measured at the national level is total diet studies which are studies designed to establish the dietary intake of food contaminants by a person who consumes a typical diet through chemical analysis (Gibson, 2005).

Examples of total diet studies include market basket studies (e.g., foods are prepared according to normal household procedures and frozen until analysis for both toxic and chemical containments), individual food items (e.g., the most commonly consumed foods are compiled from national food consumption surveys, food items are then collected from different geographical regions where it is then prepared and analyzed for specific containments and nutrients), and duplicate portion studies (e.g., data on intakes of macro and micronutrients as well as heavy metals, pesticides and contaminates; Gibson, 2005).

Furthermore, household food consumption can be used which is defined as the total amount of food available for consumption in the household, generally excluding food eaten away from the home unless taken from the home (Klaver et al., 1982).

Household food consumption methods do not provide information of food consumption by individuals within the household but on the household as a whole (Gibson, 2005).

Finally, other methods used in order to measure food consumption at the household level include the food account method, household food record method, and the household 24-hour recall method (Gibson, 2005). All household food consumption methods involve collecting data on demographic and socioeconomic characteristics of the household allowing data to be available on family income level, size of family, region of the country (Gibson, 2005).

Measuring Food Consumption of Individuals

Food consumption of individuals can be measured using both quantitative and qualitative methods. The quantitative method uses daily consumption patterns often with the use of recalls and records that are designed to measure the quantity of foods an individual consumes over a one day time period (Gibson, 2005). The amount of days, selection of days and the spacing out of the days depend on the food intake, the nutrients of interest, the day-to-day variation of nutrient intake and the level of precision required for the study (Gibson, 2005). Opposing, qualitative methods include using dietary histories and food frequency questionnaires; both measures obtain data based on retrospective information on the patterns of foods consumed during longer and less precise time periods (Gibson, 2005). The qualitative method is used to assess the usual intake of foods or specific classes of foods that can also be modified to provide data on usual nutrient intakes (Gibson, 2005).

Quantitative methods. According to Gibson (2005), the 24-hour recall method involves the subject or caretaker recalling the exact food intake of the previous 24 hours during an interview. This method is useful for assessing average usual intakes of a large population given that the sample is representative of the population and the days of the week are adequately measured. In order for this method to estimate the actual intake of individuals multiple replicate 24-hour recalls are needed to account for within-participant variation of food intake on different days of the week. An advantage to this method is it can be used with illiterate individuals, however, due to the memory aspect of what an individual consumed on the previous day can lead to poor results amongst young children and elderly. (Gibson, 2005)

Estimate food records require the subject to write down all of the food and beverages (including snacks) that are consumed over a specific time period lasting anywhere from one to seven days (Gibson, 2005). This method can be used to assess actual or usual individual food intake depending on the number of days the food record lasts (Gibson, 2005). The accuracy of this method largely depends on the individual's thoroughness and ability to estimate the quantity of food consumed (Gibson, 2005). However, the burden of recording everything one consumes may lead to lower cooperation (Gibson, 2005).

Qualitative methods. The dietary history method estimates the individual's usual food intake and meal patterns over a relatively long period of time. This method involves an interview process consisting of a 24 hour recall measuring actual intake and collection of information on usual eating patterns followed by a food frequency questionnaire to verify initial data (Gibson, 2005). This method is very labour intensive and time consuming for the subject, with the results very dependent on the skill of the interviewer (Gibson, 2005). The information gathered is often used to develop national food policies and identify food patterns that are associated with inadequate intakes (Gibson, 2005).

Food frequency questionnaires assess the frequency which food items or food groups are consumed during a specific time period, resulting in individual's usual intake of food (Gibson, 2005). The questionnaire consists of specific food item list to record intakes over a time period lasting anywhere from a day, week, month or year (Gibson, 2005). This method can be administered in the form of an interview or a self-administered questionnaire (Gibson, 2005). This method is quick having high respondent rate and low burden to the subject, however accuracy is lower compared to other

methods. Many researchers have also used food frequency questionnaires to measure food behaviours (rather than actual intakes) to estimate usual food consumption patterns (Hanning et al. 2009; Liang et al., 2009; Mullalllay et al., 2010; Veugelers et al., 2005)

Validity

When evaluating the impact of interventions (e.g., in this case, the Kinect-Ed program) it is most important that research tools are both valid and reliable. According to Gibson (2005), validity is the ability of a research tool (in this case a series of surveys) to measure what it is designed to measure. Validity describes the adequacy with which any measurement, index, or indicator reflects what it intends to measure. The current study will focus on assessing content validity and face validity. Validity studies should be conducted on participants who are representative of the population under study. This is especially important in studies where cultural and/or language differences may influence the way participants responds to the dietary assessment method. (Gibson, 2005)

Content validity. Content validity refers to the extent that the measure reflects the specific intended domain of content (Cozby, 2009). An expert panel is a common method used for establishing the content validity for surveys involving food behaviours, attitudes and nutrient intakes (Li & Levy-Milne, 2008; Schembre, Greene, & Melanson, 2009). For example, a study by Gower, Moyer-Mileur, Wilkinson, Slater, & Jordan (2010) established content validity of their survey concerning nutrition knowledge among grade 1 through 4 students by creating an expert peer-review panel ($n=12$) of health educators, elementary school teachers, and registered dietitians. Following the expert peer-review panel, five items were deleted and results indicated that the survey demonstrated appropriate content validity (Gower et al., 2010).

Face validity. Face validity refers to the degree to which a measurement tool appears to accurately measure a variable (Cozby, 2009). Face validity is frequently established in food behaviours and nutrition research by assessing the survey's target audience for comprehension and reactions to the surveys test items often with the use of a *cognitive interview* (Townsend, 2006). Willis, Royston and Bercini (1991) identified three qualitative cognitive strategies to apply for this methodology: the *think-aloud* technique, the use of *probing* questions and the *paraphrasing* technique. Hanning et al., (2009) measured face validity of the Food Behaviour Questionnaire, using the *think aloud* technique in cognitive interviews with target users ($n= 21$ grade six students). Overall, positive feedback was received regarding the content and appearance of the survey and the process of data collection thus improving the survey (Hanning et al., 2009). Further, suggestions for improvement included things like adding more foods, in particular ethnic and more brand name foods (Hanning et al., 2009).

Other types of validity. Many other forms of validity exist such as criterion validity, convergent validity and discriminate validity, yet they will not be the focus of the current study. Criterion validity assess whether a measure reflects a certain set of abilities (Townsend, 2006). In nutrition studies, criterion validity is established by using biomarkers such as serum level to indicate nutrient intake (Townsend, 2006), which is far outside the scope of the current study and the Kinect-Ed program. Convergent validity describes how well a measure correlates with similar measures on the same or similar constructs (e.g., how well survey questions measure diet when compared to a gold standard to measure diet/diet quality; Cozby, 2009; Townsend, 2006). A common way convergent validity can be assessed is through the use multiple dietary recalls or food

records (Townsend, 2006). While the overall intent of the Kinect-Ed program is to improve dietary intakes through the use of cooking/food preparation education and family meal promotion, it is not a primary objective to assess nutrient quality and, therefore, will not be included in the current study. Lastly, discriminate validity is when a measure is not related to variables that it should not be related to (Cozby, 2009), something which is not appropriate to be determined for this study.

Reliability

It is important that questionnaires are reliable (e.g., the measure is consistent or stable over time; Cozby, 2009). Dietary assessment methods are considered to be reproducible if it produces very similar results when repeatedly used in the same situation (Gibson, 2005). Therefore, reliability indicates the degree to which repeated measurements of the same variable produce the same values (Gibson, 2005). Studies designed to measure reliability should always include some repeated measurements on the same subject or sample (Gibson, 2005). Reliability can be affected by random errors due to the measure, the respondent, or the instrument itself (Gibson, 2005). Yet, the different types of random error can be minimized by having the appropriate sample size for the study, as well as ensuring the same standardized measurement technique is carried out throughout the study (Gibson, 2005). The current study will examine test-retest reliability as well as the internal consistency reliability of the surveys.

Test-retest reliability. A common way to determine reliability of a measurement is using the test-retest design in which the same dietary method is repeated on the same subjects over the same time period, after a preselected time interval (Gibson, 2005). Measures are considered to be reliable if the same result is produced over and over again

when what is being measured has not changed (Gibson, 2005). The time interval between measurements depends on the time frame of the dietary methods used (Gibson, 2005). More research is needed in order to establish the optimal time intervals for dietary methods (Gibson, 2005); however, test-retest reliability is usually measured by administering the survey among the intended study participants on two separate occasions, without any intervention (Cozby, 2009).

Gower et al. (2010) measured test-retest reliability by having a sample of participants fill out the survey twice (once at baseline and again at week 2) and used Pearson correlation coefficients for knowledge scores at the two time points. Reliability correlations were considered to be significant for the overall survey ($r= 0.54$; $P <0.001$) and all subscales ranged from $r=0.49$ to $r=0.65$ ($p <0.001$), thus fitting into what the researchers considered the moderate correlation category (Gower et al. 2010).

Pearson correlations for normally distributed data, or Spearman's correlations for non-parametric data, are often calculated to assess agreement of an individual (within-pair; Gibson, 2005). Parametric and nonparametric correlation coefficients quantify the extent to which the linear trend relates to the two sets of results and not an agreement (Gibson, 2005). The strength of the relationship is indicated by the Pearson correlation coefficient which is a value between -1 and 1 (Gibson, 2005). Further, paired *t*-tests are commonly used in order to assess the agreement between values at T1 and T2 on a group basis (Gibson, 2005). If no significant difference exists between the group mean values for the two sets of data, a satisfactory agreement is indicated and therefore the survey can be deemed reliable (Gibson, 2005).

Assessment of the reliability using the test-retest method does have its limitations. The reliability of daily food intakes within individuals can be uncertain due to random errors in measurement and changes to food intake across days of the week. However, the random measurement errors can be reduced by incorporating various quality-control procedures into the dietary assessment methods; this includes training sessions for interviewers, standardized interview techniques and questionnaires, pre-testing questionnaires, and/or administering a pilot study prior to conducting the survey (Gibson, 2005). Overall, the reliability of a dietary assessment method largely depends on time frame of the method, the population group being studied, the techniques used to measure the variables, as well as the between- and within-subject variances (Gibson, 2005).

Internal consistency reliability. This type of reliability measures whether all the items within a scale contribute to the construct (Townsend, 2006). Since all of the items measure the same variable, they should yield similar or consistent results. This method is usually assessed using the Cronbach alpha statistic. For example, Lohse, Cunningham-Sabo, Walters, and Stacey (2011) conducted a validity and reliability study measuring the cognitive behaviours towards fruits and vegetables of children aged 9 to 11 ($n=123$). The internal consistency reliability was assessed for each survey item using Cronbach's alpha, which indicated that Cronbach's alpha was ≥ 0.74 for all surveys administered (Lohse, Cunningham-Sabo, Walters, & Stacey, 2011). Another reliability study by Turconi et al., (2003) regarding food habits, eating behaviours, and nutrition knowledge among 14-17 year olds ($n=72$), reported that Cronbach's alpha ranged from a minimum of 0.55 to a maximum of 0.75 suggesting poor (e.g., <0.6) to acceptable (e.g., >0.6) internal consistency ($P < 0.01$).

Other types of reliability. Other forms of reliability exist such as inter-rater reliability and parallel reliability, although they will not be the focus of the current study. Inter-rater reliability is the extent to which raters agree on their observations of behaviours (Cozby, 2009). Since scoring/rating is not necessarily a part of the Kinect-Ed program, it is not included in the current study. Further, a script will be developed (for the larger study) to ensure that similar instructions are given to all participants so that the participants are not influenced by their teacher or the researcher administering the surveys. Finally, parallel reliability compares several results from two tests construct from the same content domain to see if they are equivalent or reliable, something for which is not currently available for this cooking and nutrition education program.

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APPENDICES

APPENDIX A

Kinect-Ed Parent Survey Content Validity Version

In order to compare your and your child's answers we would ask for you to fill in the ID section by creating a 4 digit ID. The ID should be your child's date of birth (01-31) and last 2 digits of your phone number (00-99).

ID: _____ -- _____

If you do not mind being contacted in a few weeks for a quick phone call about your families experience in the Kinect-Ed program we ask if you could leave your phone number. Thank you!

Phone #: _____

1) How often does your family eat dinner together?

0-2 days per week
 3-5 days per week
 6-7 days per week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
It is important that the family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
It is often difficult to find a time when family members can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Dinner time is about more than just getting food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
The television is on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How comfortable or uncomfortable are you with having your child(ren) in the kitchen?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4
Not			Very
Comfortable			Comfortable

4) Why do or don't you involve your child(ren) in dinner preparation? (check all that applies)

- I think it is a good opportunity to teach them important life skills
- They are not interested in cooking
- They are really interested in cooking
- I don't want to clean up the extra mess
- I am busy and involving them in dinner preparation really helps me out
- They are too busy to be involved
- I am too busy to teach them how to cook
- Having them around the stove and using knives worries me
- Other: _____

APPENDIX B

Kinect-Ed Pre-test Survey Content Validity Version

In order to keep track of your answers we ask you to create a 4 digit ID. The ID should be your date of birth (01-31), and the last 2 digits of your phone number (00-99).

ID: _____ -- _____

You can answer the following by placing an X or √ in the . Thank you for your help!

A. Demographics

1) What is your age?

- 10 11 12 13 14

2) Are you...?

- Male
 Female

3) What grade are you in?

- 5 6 7 8

4) Would you consider yourself...?

- White
 Black
 Chinese
 Arabic
 South Asian
 Native Canadian
 Other: _____

**5) Thinking about your household, who lives with you the majority of the time?
(check all that apply?)**

- Mother
 Father
 Stepmother
 Stepfather
 Parents boyfriend/ girlfriend
 Other: _____

6) Is there an adult at home at the following times?

	Almost Never	Sometimes	Usually	Almost Always
When you arrive home from school in the afternoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the early evening - about 6pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. Food Preparation**1) Do you cook?** Yes No**2) Do you make food with your family?** Yes No**3) Do you make food with your friends?** Yes No**4) Who does most of the majority of planning or preparing of meals in your household?** Mother Father Sibling I do Other: _____**5) In the past week, how many times did you help to shop for groceries?** Never One time More than one time

6) To what extent do you like or not like the following statements:

How do you feel...	Really don't like	Don't like	Not sure	Kind of like	Really like
a) About cooking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) About the taste of foods that you have helped cooked?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) About making food with your friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) About making food with your family?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) About making snacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7) How much do your parents encourage you to help out in the kitchen?

- Strongly Encourage
- Somewhat Encourage
- Neither Encourage or Discourage
- Somewhat Discourage
- Strongly Discourage

8) How often are you involved in preparing food?

- More than once/day
- Daily
- 2 to 6 times a week
- Once a week
- Once a month
- Rarely or never

9) In the past week, how many times did you help prepare food for dinner?

- None
- 1-2 times
- 3-4 times
- 5-6 times
- 7 times

b) When preparing meals, what type of food preparation do you get to do? (check all that apply)

	Breakfast	Lunch	Dinner
Cutting up foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peeling fruits/vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Measuring the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mixing the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using the can opener	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use oven/stove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assembling the food/meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setting table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. Family Meals

1) Typically, how many days per week do you eat dinner/supper with at least one parent/guardian?

0-2 days/ week

3-5 days/week

6-7 days/ week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) It is important that the family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) Mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) It is often difficult to find a time when family members can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) Dinner time is about more than just getting food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How strongly do you agree or disagree with the following statements about mealtimes in your family?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) I enjoy eating meals with my family	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) In my family, we are expected to be home for dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I am often too busy to eat dinner with my family	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

4) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) Different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) Eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) We don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) We often watch TV while eating dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

APPENDIX C

Kinect-Ed Post-test Survey Content Validity Version

In order to keep track of your answers we ask you to create a 4 digit ID. The ID should be your date of birth (01-31), and the last 2 digits of your phone number (00-99).

ID: ____ -- ____

You can answer the following questions by placing an X or √ in the □. Thank you for your help!

A. Demographics**1) What is your age?**

10 11 12 13 14

2) Are you...?

Male

Female

3) What grade are you in?

5 6 7 8

4) Would you consider yourself...?

White

Black

Chinese

Arabic

South Asian

Native Canadian

Other: _____

B. Food Preparation**1)Do you cook?**

Yes

No

2)Do you make food with your family?

Yes

No

3) Do you make food with your friends?

- Yes
 No

4) How often are you involved in preparing food?

- More than once/day
 Daily
 2 to 6 times a week
 Once a week
 Once a month
 Rarely or never

5) In the past week, how many times did you help prepare food for dinner?

- None
 1-2 times
 3-4 times
 5-6 times
 7 times

6) In the past week, how many times did you help to shop for groceries?

- Never
 One time
 More than one time

7) Who does most of the planning or preparing of meals in your household?

- Mother
 Father
 Sibling
 I do
 Other: _____

8) To what extent do you like or not like the following statements:

	Really don't like	Don't like	Not sure	Kind of like	Really like
a) About cooking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) About the taste of foods that you have helped cooked?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) About making food with your friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) About making food with your family?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) About making snacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9) How much do your parents encourage you to help out in the kitchen?

- Strongly Encourage
- Somewhat Encourage
- Neither Encourage or Discourage
- Somewhat Discourage
- Strongly Discourage

10) Check the box that best describes how you feel about the following statements:

I can...	Very Hard	Hard	Not sure	Easy	Very Easy
a) Make a meal with fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Make a meal with vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Help make a family meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Cut up food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Make a salad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Measure ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Follow recipe directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) With help, I use a recipe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11) What do you get to do when preparing food?

--

12) Tell me an example of something you cooked/ prepared this past week:

13) Since Sandi's visit to your school, did you have a conversation with your parents about getting in the kitchen?

Yes

No

What did you talk about?

C. Sandi's Visit

1) How much did you enjoy or not enjoy Sand's visit?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5
Didn't Enjoy		Neither		Really Enjoyed

2) What was the most memorable part of Sandi's visit?

3) How much did Sandi motivate or not motivate you to get in the kitchen?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5
Didn't Motivate		Neither		Couldn't wait

4) Have you changed any health behaviours as a result of Sandi's visit? (For example: eating healthier, not eating certain foods)

Yes

No

How have you changed?

D. In the Kitchen

1 a) Thinking about the past 7 days, how often were you involved in preparing food? (check all the boxes that apply) (please note the subsequent questions will pop up depending on answer)

I wasn't involved in any food preparation during the past week

I was involved in food preparation during:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Breakfast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lunch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) When preparing the following meals what type of food preparation did they often involve? (check all that apply)

	Breakfast	Lunch	Dinner
Cutting up foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peeling fruits/vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Measuring the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mixing the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using the can opener	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use oven/stove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assembling the food/meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setting table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2) Did you share or show anyone else the booklet that Sandi gave you?

No

Yes

b) If yes who? (check all that apply)

Parents/guardians

Aunts/uncles/cousins

Siblings

Friends

Grandparents

What did you talk about?

E. If you DID cook one of Sandi's recipes (if not skip this section and, go to section E from the resource book)

Choosing one meal/recipe that you made in the past month:

1) What did you like about the recipe?

2) What did you get to do?

- Cutting up foods Using the can opener Peeling vegetables
 Use oven/stove Measuring the ingredients Assembling food/meal
 Mixing the ingredients Setting the table Other: _____

3) How easy or hard do you think the recipe was to prepare?

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1 | 2 | 3 | 4 | 5 |
| Needed adult
help | | Neither | | Did it all
on my own |

4) Who ate the meal? (check all that apply)

- Parents/guardians Aunts/uncles/cousins
 Siblings Friends
 Grandparents Only me

5) Would you like to try more of Sandi's recipes or other recipes in the future?

- Yes No

Why?

F. If you DIDN'T cook one of Sandi's recipes from the booklet:

1) Why didn't you cook?

- I was too busy
 I didn't like the foods in the booklet
 We don't usually have those ingredients in my house

- I have food allergies
- I was too lazy
- Other: _____

2) Do you plan on trying one of Sandi's recipes or other recipes in the near future?

- Yes No

Why or Why not?

G. Family Meals

1) Typically, how many days per week do you eat dinner/ supper with at least one parent/guardian?

- 0-2 days/ week
- 3-5 days/week
- 6-7 days/ week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
It is important that the family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
It is often difficult to find a time when family members can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Dinner time is about more than just getting food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How strongly do you agree or disagree with the following statements about mealtimes in your family?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
I enjoy eating meals with my family	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
In my family, we are expected to be home for dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

I am often too busy to eat dinner with my family	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
---	-------------------------------	-------------------------------	-------------------------------	-------------------------------

4) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
We don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

APPENDIX D

Expert Recruitment Email

Hello,

My name is Ashley Kirby, and I am a Masters student at the University of Windsor from the Faculty of Human Kinetics. I am currently working on my thesis project titled *The Development, Validation, and Reliability of the Kinect-Ed Survey Tools* under the supervision of Dr. Sarah Woodruff.

The Kinect-Ed Program is a nutrition and cooking education program that was created by Sandi Richard, Food Network Host and International best-selling author, and Dr. Sarah Woodruff. The main goal of the Kinect-Ed program is to motivate Canadian children to get involved in food preparation, improve family meal frequency, with the ultimate goal of improving food intake among young adolescents from grades 6 to 8.

As an initial step in validating the surveys, we are inviting you to be part of an expert panel and review the Kinect-Ed surveys. Specifically, we are asking you to provide an (i) overall critique of the surveys, (ii) suggest any oversights in response options, and (iii) provide any other suggestions you may have. Please use track changes (under the review tab in Word) and or the comment box functions so we can see your changes. If could please review the surveys and send back your comments by **December 9th, 2011**.

Please note, there are 3 surveys which are part of the Kinect-Ed program including: **parent survey** (which will be completed at the time of obtaining parental consent), **pre-test survey** (prior to any involvement with the intervention), and **post-test survey** (one month after commencing the program).

At this time, we are also thinking of including the Marlowe Crowne Social Desirability Scale on the Parental Surveys in order to measure the parent's social desirability. If you have any experience with this scale, we'd appreciate any/all comments.

Please note the surveys will eventually be online; therefore we are not asking you to comment on the actual format.

Lastly, as this is part of my research project, can you please sign the *Consent to Participate in Research* form and send it back along with your review.

Thank you for your participation in this study,

Ashley Kirby

APPENDIX E

Expert Letter of Information and Consent Form

EXPERT LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

You are being asked to be on an expert panel and participate in the Validation and Reliability of the Kinect-Ed Survey Tools, a research study conducted by Ashley Kirby as part of a Master's thesis project under the supervision of Sarah Woodruff from the Faculty of Human Kinetics at the University of Windsor.

If you have any questions or concerns about the research, please feel to contact Dr. Sarah Woodruff by phone (519)253-3000 ext 4982 or email at woodruff@uwindsor.ca, or Ashley Kirby by email at kirbya@uwindsor.ca.

PURPOSE OF THE STUDY

The purpose of the study is to develop the Kinect-Ed surveys and ensure they are valid and reliable research tools. The Kinect-Ed program is a cooking and nutrition education program, developed by Sarah Woodruff, PhD at the University of Windsor and Sandi Richard, Food Network Host and international best-selling author.

PROCEDURES

You are invited to be part of the expert panel, which will help in measuring content validity of the Kinect-Ed surveys.

At this stage of survey validation you will be asked to review and critique Kinect-Ed pre-test, post-test and parent surveys for content and clarity and to provide input and suggestions in order to improve the surveys.

After surveys are reviewed by the expert panel, modifications will be reviewed and adjustments will be made in order to improve the surveys.

POTENTIAL RISKS AND DISCOMFORTS

There are no known risks or anticipated risks or discomforts for you. You will be reviewing surveys questions based on food preparation behaviours, skills, and attitudes as well as family meals. You are able to withdrawal from the study at any time.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

By participating in this study, you will help researcher establish the content validity portion of the Kinect-Ed surveys. Establishing content validity of the surveys will ensure proper evaluation of the larger program, which will begin in 2012.

COMPENSATION FOR PARTICIPATION

You will not be compensated for your involvement in the study.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. The information obtained from the study will not be used for any purpose other than research and the communication of results. All comments you provide regarding the surveys will only be accessed by the researchers of this study. Once the study is completed, your comments will be deleted electronically and any paper copies shredded.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

At the conclusions of the study, the results will be made available to the after school program directors and/or after school group leaders who will pass along to all parents.

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue your participation without penalty. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Signature of Investigator

Date

APPENDIX F

Content Validity Changes to Survey

Content Validity Changes to the Kinect-Ed Surveys

		Changes
Parent Survey		
Rewording of questions/options	Question #2 (comfort level with having child in the kitchen) Question #4i (it's ok to have the television on during meals)	
Addition of options	Question #3 (I am busy and involving them in dinner preparation really gets in the way	
Addition of questions	3 were added to question #4: <i>I want to sit down with my family, eat and talk..., We don't have to eat meals at the kitchen/dining room table, Families that eat together often eat healthier meals</i>	
Pre-Test Survey		
Rewording of questions/options	Questions #B1, #B2, #B3: options were changed from <i>yes</i> and <i>no</i> to <i>Yes, often, Sometimes, and No, never</i> Question #B13 (When were you involved in preparing/making meals in the last week?): reworded	
Addition of options	Question #A4 (ethnicity): <i>I don't know</i> option Question #A5: Which adults live with you the majority of the time? <i>grandparent</i> option Question #A5: <i>step parent</i> option was combined with the <i>mother</i> and <i>father</i> to reduce the number of options Question #B7 (Who does most of the planning/preparing of meals?) had 4 options added to it (<i>stepmother, stepfather, grandmother/grandfather, nanny or babysitter</i>) Question #B13: option was added for individuals who did not prepare food in the past week	
Removal of options	Questions #B9 (Feelings towards cooking) and #B12 (Self-efficacy scale) <i>Not sure</i> option was removed from the scale Question #B10 (How much do your parents encourage you to help out in the kitchen?): <i>Neither Encourage</i> and <i>Neither Discourage</i> were removed from the scale	
Other changes	Two charts were combined in order to create questions #C2 (Family meal behaviours and	

Post-Test Survey	attitudes question).
Addition of options	Question #D1 (food preparation techniques scale): <i>putting together a premade meal</i> Question #D2 (Did you share the booklet Sandi gave you?) and #E4 (Who ate the meal?): <i>other</i> option added Question #F1 (Why didn't you cook one of the recipes?) had two options added: <i>I don't like cooking</i> and <i>I didn't think I could do it well enough</i>
Removal of options	Questions #C1 (How much did you enjoy Sandi's visit?), #C3 (How much did Sandi motivate you?) and #E3 (How easy/hard was the recipe to prepare?): <i>Neither</i> option was removed from the scale
Addition of questions	Question #C4: Did you talk with your parents about helping to make meals? Question #G3: Families that eat together often eat healthier meals

APPENDIX G

Kinect-Ed Face Validity Surveys

Kinect-Ed Parent Survey (Cognitive Interviews)

In order to compare your and your child's answers we ask that you fill in the ID section by creating a 4 digit ID. The ID should be your child's date of birth (01-31), and the last 2 digits of your phone number (00-99).

For example if your child's birthday is March 6, and you phone number is 987-6543, your ID would be 06-43.

ID: ____ -- ____

We would like to contact you by telephone to ask about your experience with the Kinect-Ed program. If you agree please leave us your phone number below. Thank you!

Phone #: _____

1) How often does your family eat dinner together?

- | | | |
|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 0-2 | 3-5 | 6-7 |
| days per week | days per week | days per week |

2) How comfortable or uncomfortable are you with having your child(ren) in the kitchen involved in dinner preparation?

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1 | 2 | 3 | 4 |
| Not | | | Very |
| Comfortable | | | Comfortable |

3) Why do or don't you involve your child(ren) in dinner preparation? (check all that apply)

- They are really interested in cooking
- I think it is a good opportunity to teach them important life skills
- I am busy and involving them in dinner preparation really gets in the way
- They are not interested in cooking
- I don't want to clean up the extra mess
- I am busy and involving them in dinner preparation really helps me out
- They are too busy to be involved
- I am too busy to teach them how to cook
- Having them in the kitchen (e.g., around the stove and using knives) worries me
- Other: _____

4) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) It is important that the family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) Mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I want to sit down with my family, eat together and talk, but find it frustrating that I can't seem to pull that off	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) It is often difficult to find a time when family members can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
e) Dinner time is about more than just eating food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
f) Different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
g) Eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
h) We don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
i) It's ok to have the television on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
j) Families that eat together often eat healthier meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Kinect-Ed Pre-test Survey (Cognitive Interviews)

In order to keep track of your answers please create a 4 digit ID. The ID should be your date of birth (01-31), and the last 2 digits of your phone number (00-99).

For example if your birthday is March 6, and you phone number is 987-6543, your ID would be 06-43.

ID: ____ -- ____

You can answer the following questions by placing an X or √ in the . Thank you for your help!

A. Demographics

1) What is your age?

- 10 11 12 13 14

2) Are you...?

- Male
 Female

3) What grade are you in?

- 5 6 7 8

4) Would you consider yourself...?

- White
 Black
 Chinese
 Arabic
 South Asian
 Native Canadian
 Other: _____
 I don't know

5) Thinking about your household, what adults live with you the majority of the time? (check all that apply)

- Mother/ stepmother
 Father/ stepfather
 Grandmother/ Grandfather
 Parents boyfriend/ girlfriend
 Other: _____

6) Is there an adult at home at the following times?

	Almost Never	Sometimes	Usually	Almost Always
When you arrive home from school in the afternoon (2-5 pm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the early evening - about (5- 7pm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. Food Preparation**1) Do you cook?**

- Yes, often
 Sometimes
 No, never

2) Do you make food with your family?

- Yes, often
 Sometimes
 No, never

3) Do you make food with your friends?

- Yes, often
 Sometimes
 No, never

4) How often are you involved in preparing food?

- More than once/day
 Daily
 2 to 6 times a week
 Once a week
 Once a month
 Rarely or never

5) In the past week, how many times did you help to shop for groceries?

- Never
 One time
 More than one time

6) In the past week, how many times did you help prepare food for dinner?

- None
 1-2 times
 3-4 times
 5-6 times
 7 times

7) Who does the majority of planning or preparing of meals in your household?

- Mother/ Stepmother
 Father/ Stepfather
 I do
 Grandmother/ Grandfather
 Sibling
 Nanny or babysitter
 Other: _____
 I don't know

8) How often would you like to be involved in food preparation?

- More than I am now
 Less than I am now
 As much as I am now

9) Check the box that best describes how you feel about the following statements:

How do you feel...	Really don't like	Don't like	Kind of like	Really like
a) about cooking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) about the taste of foods that you have helped prepare?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) about making food with your friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) about making food with your family?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) about making snacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10) How much do your parents/ stepparents/ guardians encourage you to help out in the kitchen?

- Strongly Encourage
- Somewhat Encourage
- Neither Encourage or Discourage
- Somewhat Discourage
- Strongly Discourage

11) What do you get to do when preparing food?

--

12) Check the box that best describes how you feel about the following statements:

I can...	Very Hard	Hard	Easy	Very Easy
a) make a meal with fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) make a meal with vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) help make a family meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) cut up food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) make a salad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) measure ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) follow recipe directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) use a recipe with help	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13) Give an example of something you cooked/prepared in the last 7 days:

- I didn't prepare any food in the past week.

--

14 a) Thinking about the last 7 days, indicate when you were involved in preparing food? (check all that apply)

I wasn't involved in any food preparation during the last 7 days.

I was involved in food preparation during:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Breakfast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lunch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) When preparing meals, what type of food preparation do you get to do? (check all that apply)

	Breakfast	Lunch	Dinner
Cutting up foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peeling fruits/vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Measuring the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mixing the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using the can opener	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use oven/stove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assembling the food/meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setting table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. Family Meals

1) Typically, how many days per week do you eat dinner/supper with at least one parent/guardian?

- 0-2 days/ week
 3-5 days/week
 6-7 days/ week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) it is important that my family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) my family wants to sit down together, eat and talk, but find it frustrating that we can't seem to pull that off	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) we often watch TV while eating dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
e) it is often difficult to find a time when we can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
f) dinner time is about more than just eating food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
g) different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
h) eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
i) we don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
j) it's ok to have the television on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
k) families that eat together often eat healthier meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How strongly do you agree or disagree with the following statements about mealtimes in your family?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) I enjoy eating meals with my family	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) in my family, we are expected to be home for dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I am often too busy to eat dinner with my family	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Kinect-Ed Post-test Survey (Cognitive Interviews)

In order to keep track of your answers please create a 4 digit ID.

What is your date of birth? Ex: If your birthday is March 6 <u> 0 </u> <u> 6 </u>	_____ _____
What are the last 2 digits of your phone number? Ex: Your phone number is 987-6543 <u> 4 </u> <u> 3 </u>	_____ _____

You can answer the following questions by placing an X or \surd in the . Thank you for your help!

A. Demographics

1) What is your age?

- 9 10 11 12 13 14

2) Are you...?

- Male
 Female

3) What grade are you in?

- 4 5 6 7 8

4) Would you consider yourself...? We added some examples to help

- White (e.g., Canadian, English, French, Italian, Polish, etc)
 Black (e.g., African-Canadian, African-American, African, Nigerian, etc)
 Chinese
 Arabic (e.g., Lebanese, Jordan, Palestinian, Egyptian, Iraqi, Syrian, etc)
 South Asian (e.g., Irani, Indian, Pakistani, Sir Lankan, Nepali)
 First Nations/Native Canadian/Aboriginal
 Other: _____
 I don't know

B. Food Preparation

1) Do you cook?

- Yes, often
 Sometimes
 No, never

2) Do you prepare/make food with your family?

- Yes, often
- Sometimes
- No, never

3) Do you prepare/make food with your friends?

- Yes, often
- Sometimes
- No, never

4) How often are you involved in preparing/making food?

- More than once/day
- Daily
- 2 to 6 times a week
- Once a week
- Once a month
- Rarely or never

5) In the past week, how many times did you help to shop for groceries?

- Never
- One time
- More than one time

6) In the past week, how many times did you help prepare/make food for dinner?

- None
- 1-2 times
- 3-4 times
- 5-6 times
- 7 times

7) Who does most of the planning or preparing of meals in your household?

- Mother/ Stepmother
- Father/ Stepfather
- I do
- Grandmother/ Grandfather
- Sibling

- Nanny or babysitter
- Other: _____
- I don't know

8) How often would you like to be involved in preparing/making food?

- More than I am now
- Less than I am now
- As much as I am now

9) Check the box that best describes how you feel about the following statements:

How do you feel...	Really don't like	Don't like	Kind of like	Really like	I don't do
a) about cooking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) about the taste of foods that you have helped prepare/make?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) about making food with your friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) about making food with your family?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) about making snacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

10) How much do your parents/stepparents/guardians encourage you to help out in the kitchen?

- Strongly encourage
- Somewhat encourage
- Somewhat discourage
- Strongly discourage

11) Check the box that best describes how you feel about the following statements:

I can...	Very Hard	Hard	Easy	Very Easy
a) make a meal with fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) make a meal with vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) help make a family meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) cut up food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) make a salad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

f) measure ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) follow recipe directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) use a recipe with help	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12) What do you get to do when preparing/making food?

I don't make/prepare food.

13) What would you like to do when preparing/making food?

14) Give an example of something you prepared/cooked in the last 7 days:

I didn't make any food in the past 7 days.

C. Sandi's Visit

1) How much did you enjoy or not enjoy Sandi's visit?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4
Didn't Enjoy			Really Enjoyed

2) What did you like best about Sandi's visit?

b) When making meals, what type of food preparation do you get to do? (check all that apply)

I am not involved in making food

	Breakfast	Lunch	Dinner	Do not do
Cutting up foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peeling fruits/vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Measuring the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mixing the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using the can opener	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use oven/stove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Put together the food/meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setting table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grilling/ BBQ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Putting together a pre-made meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2) Did you share or show anyone else the booklet that Sandi gave you?

No

Yes

b) If yes who? (check all that apply)

Parents/guardians

Aunts/uncles/cousins

Siblings

Friends

Grandparents

Other: _____

What did they think about it?

E. If you DID cook one of Sandi's recipes CONTINUE answering the following questions (if not skip this section and, go to section F)

Choosing one meal/recipe that you made in the past month:

1) What did you like about the recipe?

2) What did you get to do?

- Cut up foods Used the can opener Peeled vegetables
 Used oven/stove Measured the ingredients Put together the food/meal
 Mixed the ingredients Set the table Other: _____

3) How easy or hard do you think the recipe was to prepare?

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1 | 2 | 3 | 4 |
| Very Hard | Hard | Easy | Very Easy |

4) Who ate the meal? (check all that apply)

- Parents/guardians Aunts/uncles/cousins Other: _____
 Siblings Friends
 Grandparents Only me

5) Would you like to try more of Sandi's recipes or other recipes in the future?

- Yes No

Why?

F. If you DIDN'T cook one of Sandi's recipes from the booklet COMPLETE this section:

1) Why didn't you cook one of Sandi's recipes? (check all that apply)

- I was too busy
 I didn't like the foods in the booklet
 We don't usually have those ingredients in my house
 I don't like cooking
 I didn't think I could do it well enough
 I have food allergies
 I was too lazy
 Other: _____

2) Do you plan on trying one of Sandi's recipes or other recipes in the near future?

Yes No

Why or Why not?

G. Family Meals

1) Typically, how many days per week do you eat dinner/supper with at least one parent/guardian?

0-2 days/ week

3-5 days/week

6-7 days/ week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) I enjoy eating meals with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) In my family, we are expected to be home for dinner.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I am often too busy to eat dinner with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) it is important that my family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) my family wants to sit down together, eat and talk, but find it frustrating that we can't seem to pull that off	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) we often watch TV while eating dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

e) it is often difficult to find a time when we can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
f) dinner time is about more than just eating food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
g) different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
h) eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
i) we don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
j) it's ok to have the television on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
k) families that eat together often eat healthier meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

APPENDIX H

Parent Letter of Information and Consent Form for Validity

PARENT LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Your child is being asked to participate in the Validation and Reliability of the Kinect-Ed Survey Tools, a research study conducted by Ashley Kirby as part of a Master's thesis project under the supervision of Sarah Woodruff from the Faculty of Human Kinetics at the University of Windsor.

If you have any questions or concerns about the research, please feel to contact Dr. Sarah Woodruff by phone (519)253-3000 ext 4982 or email at woodruff@uwindsor.ca, or Ashley Kirby by email at kirbya@uwindsor.ca.

PURPOSE OF THE STUDY

The purpose of the study is to develop the Kinect-Ed surveys and make sure they are valid (e.g., measure's what it's supposed to measure) and reliable (measure's the same thing consistently) research tools. The Kinect-Ed program is a cooking and nutrition education program, developed by Sarah Woodruff, PhD at the University of Windsor and Sandi Richard, Food Network Host and international best-selling author, who intend to widely distribute their program in the upcoming years. We would like to invite your son/daughter to participate in the validation portion of the study.

PROCEDURES

Children participating in the after school programs within Windsor-Essex County will be asked to participate. Your child will be introduced to the Kinect-Ed program and will be asked to fill out the Kinect-Ed surveys. The surveys ask questions regarding food preparation and family meal behaviours, skills, and attitudes. Your son or daughter will be asked to participate in a group interview (e.g., to determine how or why they filled out the survey as they did). Data collection will take 2 weeks, and each session may last 30 to 45 minutes. Your child will also provide assent during each data collection.

During the first week researchers will visit your child's after school program they will be asked to fill out the Kinect-Ed Pre-test survey. After all children complete the pre-test survey your child will be asked to participate in the group interview. The group interview includes questions directly related to the survey, such as how or why they answered the question the way they did, to define certain terms (so we can measure reading comprehension) as well as to repeat the question/answers in their own words. Once the group interview is complete, as part of the Kinect-Ed program, your child will then be shown a 15 minute video presentation from celebrity chef and *Food Network* Host Sandi Richard, and will be provided with a Kinect-Ed Booklet. The booklet contains family-friendly recipes and some basic health information.

During the second week researchers will visit your child's after school program for the last time and your child will be asked to fill out the Kinect-Ed Post-test survey. Once all participants finish filling out the survey, your child will once again participate in a group interview.

Lastly, you are asked to complete the attached survey regarding family meal behaviours and your comfort level for your son/daughter in the kitchen. If you agree to be contacted for follow-up (a short 5 minute telephone survey) interview to clarify any questions we may have, please leave your contact information in the space provided on the survey.

POTENTIAL RISKS AND DISCOMFORTS

There are no known risks or anticipated risks or discomforts for your child. They will be answering survey and interview questions based on food preparation behaviours, skills, and attitudes as well as family meals in their household. If for some reason they do not feel comfortable at any time they do not have to answer or further discuss a question. They are able to withdraw from the study at any time.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Being involved in the Kinect-Ed Program, participants will learn about cooking and healthy eating and be able to apply these skills in the kitchen with their parents should they so desire. They will hopefully become passionate about the foods they are preparing and eating. Participants are expected to become excited about cooking, and this excitement will hopefully lead to healthier meals for the entire family. By allowing your child to participate in this study, researchers will be given the opportunity to measure the validity of the Kinect-Ed survey tools, which will give them a method for evaluating the success of the Kinect-Ed program in the future.

COMPENSATION FOR PARTICIPATION

As a thank you to your son/daughter for participating in this study, he/she will be entered into a draw to win some of Sandi Richard's cookbooks.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you or your child will remain confidential and will be disclosed only with your permission. All responses from the group interview sessions will be kept in confidential. The information obtained from the study will not be used for any purpose other than research and the communication of results. All surveys and interview notes will only be accessed by the researchers of this study. Once the study is completed, the surveys and interview notes will be shredded and only an electronic copy will be kept (no identifiers). Your child's name will not be kept track of at all.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. If your child volunteers to be in this study, he/she may withdraw at any time without consequences of any kind. Your child may also refuse to answer any questions he/she does not want to answer and still remain in the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

At the conclusions of this study, the results will be made available to the after school program directors and/or after school group leaders who will pass along to all parents.

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue your child's participation without penalty. If you have questions regarding your child's rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Signature of Investigator

Date

APPENDIX I

Face Validity Interview Scripts

Kinect-Ed Pre-Test Interview Script

Now that you have all completed the Pre-test survey we are going to go through the survey questions as a group. I will be asking questions to better understand how everyone answered the questions, to see if they were asked in the best way or if maybe we didn't include important options. Feel free to ask me any questions you may have about the survey. Remember, there are no right or wrong answers, we are just trying to see how you answered the questions!

Section A: Demographics

What about the generating the code? Was there any problems?

Was everyone able to answer the first three questions of section A?

Were there enough response options available for the others?

Question 4: Who picked "other" as their answer? Why?

How could we better ask this question?

Question 5: Who picked "other" as their answer?

Which options were not available?

Question 6: What does adult means in this question?

Section B: Food Preparation

Question 2/3: Do you cook different foods with your friends vs. your family

- What does cook mean to you?

Question 7: Who picked "other" as their answer? What were some of your answers for other?

What do you think planning meals means?

Question 10: In your own words what does encourage mean?

What are some examples of ways your parents encourage you in the kitchen?

Question 11: What does preparing food mean to you?

- What would you have answered differently if we asked what do you get to do in the kitchen?

- Is what you get to do in the kitchen now different from what you would like to do?

- Any ideas on how we can make this a better question?

Question 13: What are some examples of things you get to do when preparing food?

- Can you think of a better way to ask this question?

- Can you share an example of something you cooked/ prepared in the past week?

- Question 14: a) Were there any problems answering this question?
14b) Can anyone tell me what “assembling the food/meal” means?
- Were there types of food preparation that you usually do that wasn’t found in this list?
- What did you get to do?

Section C: Family Meals

Question 1: Are there other people that you normally eat supper with who is not your parent or guardian?

Question 2: In your own words what does question 2f mean?

Question 3a: Why do you enjoy/ not enjoy eating meals with your family?

Question 3c: Why are you too busy to eat with your family?

Question 4: Who answered 2i as strongly disagree, or somewhat disagree. Where does your family normally eat meals?

Kinect-Ed Post-Test Interview Script

Some of the questions on the pre-test are identical to questions found on the post-test, if participants are found to be having difficulty during the pre-test interview with these question then some of the interview questions will be used.

Section B:

Question 1: Is “cook” the same as “make or prepare” food?

Section C:

Question 4: Did anyone answer yes to this question?

How did your talk go? What did your parents think about you helping more in the kitchen?

Why didn't you talk to them about it?

Question 5: What does this question mean in your own words?

Would anyone like to share an example of how their health behaviours changed?

Section D:

Question 1b: What is a premade meal

Question 2: Did anyone answer other to this question? Who?

Would anyone like to share what they talked about? (besides parents)

Section E:

Did anyone get confused when they got to section D and didn't know if they should answer the questions or skip the section?

Do you think we could make it easier to understand?

Question 2: Did anyone answer other for this question? What did you do?

Question 4: Did anyone answer other to this question?

Question 5: What does this question mean in your own words?

Why will / won't you try the recipes?

Section F:

Question 1: Did anyone pick other? What was your answer?

Did anyone answer “I was too busy”?, what were some reasons why you were too busy?

Question 2: In your own words what does “near future” mean?

If you answered no to this, why is this?

APPENDIX J

Child Assent Form- Face Validity

**Assent Form
Validation of the Kinect-Ed Survey Tools**

We would like to invite you to participate in a study that is going to look at whether the surveys we have created are valid (e.g. the measure what they are suppose to measure). Our surveys our going to ask you questions about your involvement in the kitchen, your food preparation skills, as well as meals in your family. As part of this study you will also participate in a group interview where along with the other kids from the your after school program, you will be asked to talk about the surveys so we can make sure you understand our questions. Your answers will help us to improve the Kinect-Ed Surveys.

I want you to know that I will not be sharing any of your answers with your program leaders or parents or any other kids outside the group. All your answers will be kept private. We ask that you be kind to the other kids in your after school group and not repeat anyone's answers outside of the group discussion.

When all the kids who agree to be in our study are finished filling out the surveys, we will write a report on what we have learned about our surveys. Your teachers may read it, and it might be put in a book, but no one will know who the kids are that answered our questions.

Your mom and/or dad have said it is okay for you to fill out our surveys and take part in the group interviews. Do you think you would like to answer the surveys and take part in the group interview? You won't get into any trouble if you say no. If you decide you would like to fill out the surveys, and participate in the interviews you can stop answering them at anytime, and you don't have to answer any question you do not want to answer. It's entirely up to you. Would you like to fill out the surveys and be a part of the group interviews?

I understand what I am being asked to do to be in this study, and I agree to be in this study.

Signature

Date

APPENDIX K

Face Validity Changes to the Pre- and Post-Test Kinect-Ed Surveys

	Changes
Pre-Test Survey	
Rewording of questions/options	6 questions (#B2, #B3, #B4, #B6, #B11, #B14): reworded to read <i>prepare/make</i> in order to keep consistent
Addition of options	3 other questions reworded (#B7, #B13, #B14b item 7) for a better understanding Question #A1 (age) and #A2 (grade) addition of 1 option Questions #B9 (Feeling about cooking) and #B15b (food preparation techniques): <i>Do not do</i> section added to charts Question #B14b: <i>I am not involved in preparing/making food</i> option added Question #B14b: <i>Grilling/BBQ</i> and <i>Putting together a pre-made meal</i>
Addition of questions	Question found after #B12 added to examine what children and adolescents would like to do when preparing and making food
Other changes	Reformatting the tracking identification code Question #A3 (ethnicity question) addition of examples
Post-Test Survey	
Rewording of questions/options	Question #A3 (ethnicity) was reworded (“e.g.,” was changed to “for example”) Question #B7 <i>household</i> was reworded to read <i>home</i> Questions #E5 (Would you like to try more of Sandi’s recipes?) and #F2 (Do you plan on trying one of Sandi’s recipes?) was reworded to <i>soon</i> instead of <i>in the future</i>
Other Changes	tracking identification code was further reworded to ask <i>what day of the month were you born?</i> instead of <i>What is your date of birth?</i>

APPENDIX L

Kinect-Ed Reliability Surveys

Kinect-Ed Parent Survey Reliability and Final Version

In order to compare your and your child's answers we ask that you fill in the ID section by creating a 4 digit ID.

What day of the month was your child born? Ex: If your birthday is March 6 <u>0</u> <u>6</u>	_____
What are the last 2 digits of your phone number? Ex: Your phone number is 987-6543 <u>4</u> <u>3</u>	_____

We would like to contact you by telephone to ask about your experience with the Kinect-Ed program. If you agree please leave us your phone number below. Thank you!

Phone #:

1) How often does your family eat dinner together?

0-2

days per week

3-5

days per week

6-7

days per week

2) How comfortable or uncomfortable are you with having your child(ren) in the kitchen involved in dinner preparation?

1

Not
Comfortable

2

3

4

Very
Comfortable**3) Why do or don't you involve your child(ren) in dinner preparation? (check all that apply)** They are really interested in cooking I think it is a good opportunity to teach them important life skills I am busy and involving them in dinner preparation really gets in the way They are not interested in cooking I don't want to clean up the extra mess I am busy and involving them in dinner preparation really helps me out They are too busy to be involved I am too busy to teach them how to cook Having them in the kitchen (e.g., around the stove and using knives) worries me Other: _____

4) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) It is important that the family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) Mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I want to sit down with my family, eat together and talk, but find it frustrating that I can't seem to pull that off	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) we often watch TV while eating dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
e) It is often difficult to find a time when family members can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
f) Dinner time is about more than just eating food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
g) Different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
h) Eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
i) We don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
j) It's ok to have the television on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
k) Families that eat together often eat healthier meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Kinect-Ed Pre-test Survey Test-retest Reliability Version

In order to keep track of your answers please create a 4 digit ID.

What day of the month were you born? Ex: If your birthday is March 6 <u> 0 </u> <u> 6 </u>	____ ____
What are the last 2 digits of your phone number? Ex: Your phone number is 987-6543 <u> 4 </u> <u> 3 </u>	____ ____

You can answer the following questions by placing an X or \surd in the . Thank you for your help!

A. Demographics

1) What is your age?

- 9 10 11 12 13 14

2) Are you...?

- Male
 Female

3) What grade are you in?

- 4 5 6 7 8 9

4) Would you consider yourself...?

- White (for example, Canadian, English, French, Italian, Polish, etc)
 Black (for example, African-Canadian, African-American, African, Nigerian, etc)
 Chinese
 Arabic (for example, Lebanese, Jordan, Palestinian, Egyptian, Iraqi, Syrian, etc)
 South Asian (for example, Irani, Indian, Pakistani, Sir Lankan, Nepali)
 Aboriginal (for example, First Nations, Metis, Inuit)
 Other: _____
 I don't know

5) Thinking about your home, what adults live with you the majority of the time? (check all that apply)

- Mother/ Stepmother
 Father/ Stepfather
 Grandmother/ Grandfather
 Parents Boyfriend/ Girlfriend

- Guardian
- Brothers/ Sisters
- Other: _____

6) Is there an adult at home at the following times?

	Almost Never	Sometimes	Usually	Almost Always
When you arrive home from school in the afternoon (2-5 pm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the early evening (about (5-7pm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. Food Preparation

1) Do you cook?

- Yes, often
- Sometimes
- No, never

2) Do you prepare/make food with your family?

- Yes, often
- Sometimes
- No, never

3) Do you prepare/make food with your friends?

- Yes, often
- Sometimes
- No, never

4) How often are you involved in preparing/making food?

- More than once/day
- Daily
- 2 to 6 times a week
- Once a week
- Once a month
- Rarely or never

5) In the past week, how many times did you help to shop for groceries?

- Never
 One time
 More than one time

6) In the past week, how many times did you help prepare/make food for dinner?

- None
 1-2 times
 3-4 times
 5-6 times
 7 times

7) Who does the most planning or preparing of meals in your house?

- Mother/ Stepmother
 Father/ Stepfather
 I do
 Grandmother/ Grandfather
 Sibling
 Nanny or babysitter
 Other: _____
 I don't know

8) How often would you like to be involved in preparing/making food?

- More than I am now
 Less than I am now
 As much as I am now

9) Check the box that best describes how you feel about the following statements:

How do you feel...	Really don't like	Don't like	Kind of like	Really like	I don't do
a) about cooking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) about the taste of foods that you have helped prepare/make?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) about making food with your friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

d) about making food with your family?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) about making snacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

10) How much do your parents/ stepparents/ guardians encourage you to help out in the kitchen?

- Strongly encourage
- Somewhat encourage
- Somewhat discourage
- Strongly discourage

11) Check the box that best describes how you feel about the following statements:

I can...	Very Hard	Hard	Easy	Very Easy
a) make a meal with fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) make a meal with vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) help make a family meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) cut up food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) make a salad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) measure ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) follow recipe directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) use a recipe with help	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12) What do you get to do when preparing/making food?

- I don't make/prepare food.

13) What would you like to do when preparing/making food?

14) Give an example of something you prepared/cooked in the last 7 days:

I didn't make any food in the past 7 days.

--

15 a) Thinking about the last 7 days, indicate when you were involved in preparing/making food? (check all that apply)

I wasn't involved in preparing/making any food during the last 7 days.

I was involved in preparing/making food during:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Breakfast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lunch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) When making meals, what type of food preparation do you get to do? (check all that apply)

I am not involved in making food

	Breakfast	Lunch	Dinner	Do not do
Cutting up foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peeling fruits/vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Measuring the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mixing the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using the can opener	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use oven/stove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Put together the food/meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setting table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grilling/ BBQ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Putting together a pre-made meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. Family Meals

1) Typically, how many days per week do you eat dinner/supper with at least one parent/guardian?

0-2 days/ week

3-5 days/week

6-7 days/ week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) it is important that my family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) my family wants to sit down together, eat and talk, but find it frustrating that we can't seem to pull that off	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) we often watch TV while eating dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
e) it is often difficult to find a time when we can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
f) dinner time is about more than just eating food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
g) different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
h) eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
i) we don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
j) it's ok to have the television on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
k) families that eat together often eat healthier meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How strongly do you agree or disagree with the following statements about mealtimes in your family?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) I enjoy eating meals with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) In my family, we are expected to be home for dinner.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I am often too busy to eat dinner with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Kinect-Ed Post-test Survey Test-Retest Reliability Version

In order to keep track of your answers please create a 4 digit ID.

What day of the month were you born? Ex: If your birthday is March 6 <u> 0 </u> <u> 6 </u>	
What are the last 2 digits of your phone number? Ex: Your phone number is 987-6543 <u> 4 </u> <u> 3 </u>	

You can answer the following questions by placing an X or \checkmark in the . Thank you for your help!

A. Demographics

1) What is your age?

- 9 10 11 12 13 14

2) Are you...?

- Male
 Female

3) What grade are you in?

- 4 5 6 7 8

4) Would you consider yourself...?

- White (for example, Canadian, English, French, Italian, Polish, etc)
 Black (for example, African-Canadian, African-American, African, Nigerian, etc)
 Chinese
 Arabic (for example, Lebanese, Jordan, Palestinian, Egyptian, Iraqi, Syrian, etc)
 South Asian (for example, Irani, Indian, Pakistani, Sir Lankan, Nepali)
 Aboriginal (for example, First Nations, Metis, Inuit)
 Other: _____
 I don't know

B. Food Preparation

1) Do you cook?

- Yes, often
 Sometimes
 No, never

2) Do you prepare/make food with your family?

- Yes, often
- Sometimes
- No, never

3) Do you prepare/make food with your friends?

- Yes, often
- Sometimes
- No, never

4) How often are you involved in preparing/making food?

- More than once/day
- Daily
- 2 to 6 times a week
- Once a week
- Once a month
- Rarely or never

5) In the past week, how many times did you help to shop for groceries?

- Never
- One time
- More than one time

6) In the past week, how many times did you help prepare/make food for dinner?

- None
- 1-2 times
- 3-4 times
- 5-6 times
- 7 times

7) Who does most of the planning or preparing of meals in your home?

- Mother/ Stepmother
- Father/ Stepfather
- I do
- Grandmother/ Grandfather

- Sibling
- Nanny or babysitter
- Other: _____
- I don't know

8) How often would you like to be involved in preparing/making food?

- More than I am now
- Less than I am now
- As much as I am now

9) Check the box that best describes how you feel about the following statements:

How do you feel...	Really don't like	Don't like	Kind of like	Really like	I don't do
a) about cooking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) about the taste of foods that you have helped prepare/make?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) about making food with your friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) about making food with your family?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) about making snacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

10) How much do your parents/stepparents/guardians encourage you to help out in the kitchen?

- Strongly encourage
- Somewhat encourage
- Somewhat discourage
- Strongly discourage

11) Check the box that best describes how you feel about the following statements:

I can...	Very Hard	Hard	Easy	Very Easy
a) make a meal with fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) make a meal with vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) help make a family meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) cut up food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

e) make a salad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) measure ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) follow recipe directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) use a recipe with help	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12) What do you get to do when preparing/making food?

I don't make/prepare food.

13) What would you like to do when preparing/making food?

14) Give an example of something you prepared/cooked in the last 7 days:

I didn't make any food in the past 7 days.

C. Sandi's Visit

1) How much did you enjoy or not enjoy Sandi's visit?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4
Didn't			Really
Enjoy			Enjoyed

2) What did you like best about Sandi's visit?

b) When making meals, what type of food preparation do you get to do? (check all that apply)

I am not involved in making food

	Breakfast	Lunch	Dinner	Do not do
Cutting up foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peeling fruits/vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Measuring the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mixing the ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using the can opener	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use oven/stove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Put together the food/meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setting table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grilling/ BBQ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Putting together a pre-made meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2) Did you share or show anyone else the booklet that Sandi gave you?

No

Yes

b) If yes who? (check all that apply)

Parents/guardians

Aunts/uncles/cousins

Siblings

Friends

Grandparents

Other: _____

What did they think about it?

E. If you DID cook one of Sandi's recipes CONTINUE answering the following questions (if not skip this section and, go to section F)

Choosing one meal/recipe that you made in the past month:

1) What did you like about the recipe?

2) What did you get to do?

- Cut up foods Used the can opener Peeled vegetables
 Used oven/stove Measured the ingredients Put together the food/meal
 Mixed the ingredients Set the table Other: _____

3) How easy or hard do you think the recipe was to prepare?

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1 | 2 | 3 | 4 |
| Very Hard | Hard | Easy | Very Easy |

4) Who ate the meal? (check all that apply)

- Parents/guardians Aunts/uncles/cousins Other: _____
 Siblings Friends
 Grandparents Only me

5) Would you like to try more of Sandi's recipes or other recipes soon?

- Yes No

Why?

F. If you DIDN'T cook one of Sandi's recipes from the booklet COMPLETE this section:

1) Why didn't you cook one of Sandi's recipes? (check all that apply)

- I was too busy
 I didn't like the foods in the booklet
 We don't usually have those ingredients in my house
 I don't like cooking
 I didn't think I could do it well enough
 I have food allergies
 I was too lazy
 Other: _____

2) Do you plan on trying one of Sandi's recipes or other recipes in the soon?

Yes No

Why or Why not?

G. Family Meals

1) Typically, how many days per week do you eat dinner/supper with at least one parent/guardian?

0-2 days/ week

3-5 days/week

6-7 days/ week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) I enjoy eating meals with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) In my family, we are expected to be home for dinner.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I am often too busy to eat dinner with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) it is important that my family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) my family wants to sit down together, eat and talk, but find it frustrating that we can't seem to pull that off	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) we often watch TV while eating dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

e) it is often difficult to find a time when we can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
f) dinner time is about more than just eating food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
g) different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
h) eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
i) we don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
j) it's ok to have the television on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
k) families that eat together often eat healthier meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

APPENDIX M

Parent Letter of Information and Consent Form for Reliability

PARENT LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Your child is being asked to participate in the Validation and Reliability of the Kinect-Ed Survey Tools, a research study conducted by Ashley Kirby as part of a Master's thesis project under the supervision of Sarah Woodruff from the Faculty of Human Kinetics at the University of Windsor.

If you have any questions or concerns about the research, please feel to contact Dr. Sarah Woodruff by phone (519)253-3000 ext 4982 or email at woodruff@uwindsor.ca, or Ashley Kirby by email at kirbya@uwindsor.ca.

PURPOSE OF THE STUDY

The purpose of the study is to develop the Kinect-Ed surveys and make sure they are valid (e.g., measure's what it's supposed to measure) and reliable (measure's the same thing consistently) research tools. The Kinect-Ed program is a cooking and nutrition education program, developed by Sarah Woodruff, PhD at the University of Windsor and Sandi Richard, Food Network Host and international best-selling author, who intend to widely distribute their program in the upcoming years. We would like to invite your son/daughter to participate in the reliability portion of the study.

PROCEDURES

Children participating in the after school programs within Windsor-Essex County will be asked to participate. Your child will be introduced to the Kinect-Ed program and will be asked to fill out the Kinect-Ed surveys. The surveys ask questions regarding food preparation and family meal behaviours, skills, and attitudes. Your son or daughter will be asked to fill out each of the Kinect-Ed surveys a twice. Data collection will take 4 weeks, and each session will last 15 to 30 minutes. Your child will also provide assent during each data collection.

During the first week researchers will visit your child's after school program and your child will be asked to fill out the Kinect-Ed Pre-test survey. The following week researchers will visit your child's after school program and your child will be asked to fill out the Kinect-Ed Pre-test survey a second time. Once all children have completed the survey, as part of the Kinect-Ed program, your child will then be shown a 15 minute video presentation from celebrity chef and *Food Network* Host Sandi Richard, and will be provided with a Kinect-Ed Booklet. The booklet contains family-friendly recipes and some basic health information.

During the third week researchers will visit your child's after school program and your child will be asked to fill out the Kinect-Ed Post-test survey. On the fourth and final week, researchers will visit your child's after school program and your child will be asked to fill out the Kinect-Ed Post-test survey for a second time.

Lastly, you are asked to complete the attached survey regarding family meal behaviours and your comfort level for your son/daughter in the kitchen. If you agree to be contacted for follow-up (a short 5 minute telephone survey) interview to clarify any questions we may have, please leave your contact information in the space provided on the survey.

POTENTIAL RISKS AND DISCOMFORTS

There are no known or anticipated risks or discomforts for your child. They will be answering survey and questions based on food preparation behaviours, skills, and attitudes as well as family meals in their household. If for some reason they do not feel comfortable at any time they do not have to answer a question. They are able to withdrawal from the study at any time.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Being involved in the Kinect-Ed Program, participants will learn about cooking and healthy eating and be able to apply these skills in the kitchen with their parents should they so desire. They will hopefully become passionate about the foods they are preparing and eating. Participants are expected to become excited about cooking, and this excitement will hopefully lead to healthier meals for the entire family.

By allowing your child to participate in this study, researchers will be given the opportunity to measure the reliability of the Kinect-Ed survey tools, which will give them a method for evaluating the success of the Kinect-Ed program in the future.

COMPENSATION FOR PARTICIPATION

As a thank you to your son/daughter for participating in this study, he/she will be entered into a draw to win one of Sandi Richard's cookbooks. For each day of data collection your child participates in they will receive a ballot to fill out for a chance to win (possible 4 ballots).

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you or your child will remain confidential and will be disclosed only with your permission. The information obtained from the study will not be used for any purpose other than research and the communication of results. All surveys will only be accessed by the researchers of this study. Once the study is completed, the surveys will be shredded and only electronic data will be kept (with coded identification). Your child's name will not be kept track of at all.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. If your child volunteers to be in this study, he/she may withdraw at any time without consequences of any kind. Your child may also refuse to answer any questions he/she does not want to answer and still remain in the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

At the conclusions of the study, the results will be made available to the after school program directors and/or after school group leaders who will pass along to all parents.

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue your child's participation without penalty. If you have questions regarding your child's rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Signature of Investigator

Date

APPENDIX N

Child Assent Form- Reliability

**Assent Form
Reliability of the Kinect-Ed Survey Tools**

We would like to invite you to participate in a study that is going to look at whether the surveys we have created are reliable (they measure the same thing every time). Our surveys are going to ask you questions about your involvement in the kitchen, your food preparation skills, as well as meals in your family. Your answers will help us to improve the Kinect-Ed Surveys.

I want you to know that I will not be sharing any of your answers with your program leaders or parents or any other kids. All your answers will be kept private.

When all the kids who agree to be in our study are finished filling out the surveys, we will write a report on what we have learned about our surveys. Your teachers may read it, and it might be put in a book, but no one will know who the kids are that answered our questions.

Your mom and/or dad have said it is okay for you to fill out our surveys and take part in our study. Do you think you would like to answer the surveys? You won't get into any trouble if you say no. If you decide you would like to fill out the surveys, you can stop answering them at anytime, and you don't have to answer any question you do not want to answer. It's entirely up to you. Would you like to fill out the surveys?

I understand what I am being asked to do to be in this study, and I agree to be in this study.

Signature

Date

Appendix O

Post-test Reliability Scores (based on the same Pre-test questions)

Test-retest Reliability Scores of Kinect-Ed Post-test Survey Food Preparation and Family Meal Section

	Pearson		<i>t</i>	χ^2	Phi
	<i>r</i>	<i>p</i>			
B. Food Preparation					
1. Do you cook?	.839	<.001	<i>t</i> (106)=-.276, <i>p</i> =.783		
2. Do you cook with family?	.827	<.001	<i>t</i> (106)=1.070, <i>p</i> =.287		
3. Do you cook with friends?	.859	<.001	<i>t</i> (106)=.904, <i>p</i> =.368		
4. How often do you make food?	.836	<.001	<i>t</i> (106)=.776, <i>p</i> =.439		
5. In the past week did you help shop for groceries?	.828	<.001	<i>t</i> (106)=.894, <i>p</i> =.374		
6. In the past week how many times did you help make dinner?	.845	<.001	<i>t</i> (106)=-.467, <i>p</i> =.642		
7. Who does the planning or preparing of meals in your house:					
7a. Mother/Stepmother				73.277, <i>p</i> <.001	.828
7b. Father/ Stepfather				78.450, <i>p</i> <.001	.856
7c. I do				79.478, <i>p</i> <.001	.862
7d. Grandparent				107.000, <i>p</i> <.001	1.000
7e. Sibling				70.654, <i>p</i> <.001	.813
7f. Nanny/ babysitter				107.000, <i>p</i> <.001	1.000
7g. Other				*	*
7h. I don't know					
8. How often would you like to be involved in food preparation?	.690	<.001	<i>t</i> (106)=.786, <i>p</i> =.433		
9. How do you feel about:					
9a. Cooking	.775	<.001	<i>t</i> (106)=.844, <i>p</i> =.401		
9b. The taste of food you have to prepare/make	.736	<.001	<i>t</i> (105)=-1.370, <i>p</i> =.174		
9c. Making food with friends	.794	<.001	<i>t</i> (104)=-1.055, <i>p</i> =.294		
9d. Making food with family	.790	<.001	<i>t</i> (105)=.134, <i>p</i> =.893		
9e. Making snacks	.593	<.001	<i>t</i> (106)=.601, <i>p</i> =.549		
10. How much are you encouraged to help out in the kitchen	.826	<.001	<i>t</i> (106)=.942, <i>p</i> =.348		

11. Self-Efficacy Scale	.863	<.001	$t(103)=.939, p=.350$		
12. I don't make food				66.985, $p<.001$	.791
13. What would you like to do when preparing/making food?	**		**		
14. I didn't make food in past 7 days				38.203, $p<.001$	.598
15a. I wasn't involved in preparing foods in the last 7 days				47.334, $p<.001$	.665
15a. Meal total Scale (out 21)	.723	<.001	$t(71)=.457, p=.649$		
15b. I am not involved in making food					
15b. Food Preparation (Total out of 11)	.815	<.001	$t(80)=-1.146, p=.255$		
C. Family Meals					
1. How many nights per/wk do you eat dinner with one parent/ guardian	.717	<.001	$t(101)=-.705, p=.482$		
2. Family Meal Scale (out of 56)	.919	<.001	$t(99)=-1.555, p=.123$		

Note. * Measures of association cannot be computed because at least one variable is constant. The df for all $\chi^2 = 1$. ** Open ended question no stats computed.

APPENDIX P

Internal Consistency Reliability Scores

Internal Consistency Reliability Scores of the Kinect-Ed Pre-test Survey

	Cronbach's α		Cronbach's α if item deleted	
	Pre-test T1	Pre-test T2	Pre-test T1	Pre-test T2
Self Efficacy Scale:	.811	.875		
a. Make a meal with fruit			.796	.879
b. Make a meal with vegetables			.789	.862
c. Help make a family meal			.798	.856
d. Cut up food			.795	.861
e. Make a salad			.795	.854
f. Measure ingredients			.779	.852
g. Follow recipe directions			.777	.852
h. Use a recipe with help			.785	.862
Food Preparation Techniques:	.725	.761		
a. Cutting up foods			.691	.732
b. Peeling fruits/vegetables			.700	.730
c. Measuring the ingredients			.673	.721
d. Mixing the ingredients			.675	.716
e. Using the can opener			.721	.748
f. Use oven/stove			.690	.728
g. Put together food/meal			.686	.744
h. Setting table			.720	.783
i. Microwave			.715	.740
j. Grilling/BBQ			.731	.759
k. Putting together a pre-made meal			.745	.757
Family Meal Scale:	.776	.823		
a. it is important that my family eat at least one meal together			.760	.810
b. mealtime is a time for talking with other family members			.762	.813

c. my family wants to sit and talk but can't seem to pull that off	.779	.820
d. we often watch TV while eating dinner	.748	.805
e. it is often difficult to find a time when we can sit and talk with each other	.760	.810
f. dinner time is more than just eating food; we all talk with each other	.759	.812
g. different schedules make it hard for us to eat meals together	.768	.801
h. eating brings people together in an enjoyable way	.769	.813
i. we don't have to eat meals at the kitchen/dining room table	.755	.809
j. it's ok to have television on during meals	.755	.813
k. families that eat together often eat healthier meals	.766	.818
a. I enjoy eating meals with my family	.771	.821
b. In my family we are expected to be home for dinner	.766	.812
c. I am often too busy to eat meals with my family	.765	.815

APPENDIX Q

Parent Interview Script

Interview Script: Phone Follow-up for Parent Survey

I am just calling as part of the Kinect-Ed Program that your child was part of. When you filled out a survey you provided us with your phone number to contact you for follow up. I was wondering if I could have about 5 minutes of your time and asked you a few questions based on the Kinect-Ed program?

- 1) Why is dinner important to your family?
- 2a) Approximately, how often does your family have family meals?
- 2b) Do a 7 day recall (based on current day of the week, ask prompting questions regarding family meal frequency.
- 3) What do you allow your kids to do during meal preparation?
- 4) Many parents often say they don't like having their children in the kitchen because of the extra time involved, the mess, and sometimes their safety. What some reasons why you are/ or aren't you comfortable with having your children in the kitchen?
- 5) Has your child wanted to help out in the kitchen/ or become more involved in family meals since being a part of the Kinect-Ed program?
- 6) Did your child share the Kinect-Ed Booklet with you? If so has your family found it to be a helpful tool?
- 7) What did your child say, do? Have they wanted cook/ look at/buy any other cookbooks or look up recipes online?

Thank you for your input and time.

APPENDIX R

Kinect-Ed Surveys Final Version

Kinect-Ed Pre-test Final Version

In order to keep track of your answers please create a 4 digit ID.

What day of the month were you born? Ex: If your birthday is March 6 <u> 0 </u> <u> 6 </u>	_____
What are the last 2 digits of your phone number? Ex: Your phone number is 987-6543 <u> 4 </u> <u> 3 </u>	_____

You can answer the following questions by placing an X or \checkmark in the . Thank you for your help!

A. Demographics

1) What is your age?

- 9 10 11 12 13 14

2) Are you...?

- Male
 Female

3) What grade are you in?

- 4 5 6 7 8 9

4) Would you consider yourself...?

- White (for example, Canadian, English, French, Italian, Polish, etc)
 Black (for example, African-Canadian, African-American, African, Nigerian, etc)
 Chinese
 Arabic (for example, Lebanese, Jordan, Palestinian, Egyptian, Iraqi, Syrian, etc)
 South Asian (for example, Irani, Indian, Pakistani, Sir Lankan, Nepali)
 Aboriginal (for example, First Nations, Metis, Inuit)
 Other: _____
 I don't know

**5) Thinking about your home, what adults live with you the majority of the time?
(check all that apply)**

- Mother/ Stepmother
- Father/ Stepfather
- Grandmother/ Grandfather
- Parents Boyfriend/ Girlfriend
- Guardian
- Adult Brothers/ Sisters
- Other: _____

6) Is there an adult at home at the following times?

	Almost Never	Sometimes	Usually	Almost Always
When you arrive home from school in the afternoon (2-5 pm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the early evening (about (5- 7pm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. Food Preparation

1) Do you cook?

- Yes, often
- Sometimes
- No, never

2) Do you prepare/make food with your family?

- Yes, often
- Sometimes
- No, never

3) Do you prepare/make food with your friends?

- Yes, often
- Sometimes
- No, never

4) How often are you involved in preparing/making food?

- More than once/day
- Daily
- 2 to 6 times a week
- Once a week
- Once a month
- Rarely or never

5) In the past week, how many times did you help to shop for groceries?

- Never
- One time
- More than one time

6) In the past week, how many times did you help prepare/make food for dinner?

- None
- 1-2 times
- 3-4 times
- 5-6 times
- 7 times

7) Who does the most planning or preparing of meals in your house?

- Mother/ Stepmother
- Father/ Stepfather
- I do
- Grandmother/ Grandfather
- Sibling
- Nanny or babysitter
- Other: _____
- I don't know

8) How often would you like to be involved in preparing/making food?

- More than I am now
- Less than I am now
- As much as I am now

9) Check the box that best describes how you feel about the following statements:

How do you feel...	Really don't like	Don't like	Kind of like	Really like	I don't do
a) about cooking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) about the taste of foods that you have helped prepare/make?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) about making food with your friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) about making food with your family?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) about making snacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

10) How much do your parents/ stepparents/ guardians encourage you to help out in the kitchen?

- Strongly encourage
- Somewhat encourage
- Somewhat discourage
- Strongly discourage

11) Check the box that best describes how you feel about the following statements:

I can...	Very Hard	Hard	Easy	Very Easy
a) make a meal with fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) make a meal with vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) help make a family meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) cut up food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) make a salad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) measure ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) follow recipe directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) use a recipe with help	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12) What do you get to do when preparing/making food?

- I don't make/prepare food.

13) What would you like to do when preparing/making food?

--

14) Give an example of something you prepared/cooked in the last 7 days:

I didn't make any food in the past 7 days.

--

15 a) Thinking about the last 7 days, indicate when you were involved in preparing/making food? (check all that apply)

I wasn't involved in preparing/making any food during the last 7 days.

I was involved in preparing/making food during:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Breakfast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lunch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) When making meals, what type of food preparation do you get to do? (check all that apply)

I am not involved in making food

	Do	Don't do
Cutting up foods	<input type="checkbox"/>	<input type="checkbox"/>
Peeling fruits/vegetables	<input type="checkbox"/>	<input type="checkbox"/>
Measuring the ingredients	<input type="checkbox"/>	<input type="checkbox"/>
Mixing the ingredients	<input type="checkbox"/>	<input type="checkbox"/>
Using the can opener	<input type="checkbox"/>	<input type="checkbox"/>
Use oven/stove	<input type="checkbox"/>	<input type="checkbox"/>
Put together the food/meal	<input type="checkbox"/>	<input type="checkbox"/>
Setting table	<input type="checkbox"/>	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	<input type="checkbox"/>
Grilling/ BBQ	<input type="checkbox"/>	<input type="checkbox"/>
Putting together a pre-made meal	<input type="checkbox"/>	<input type="checkbox"/>

C. Family Meals

1) Typically, how many days per week do you eat dinner/supper with at least one parent/guardian?

0-2 days/ week

3-5 days/week

6-7 days/ week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) it is important that my family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) my family wants to sit down together, eat and talk, but find it frustrating that we can't seem to pull that off	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) we often watch TV while eating dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
e) it is often difficult to find a time when we can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
f) dinner time is about more than just eating food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
g) different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
h) eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
i) we don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
j) it's ok to have the television on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
k) families that eat together often eat healthier meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How strongly do you agree or disagree with the following statements about mealtimes in your family?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) I enjoy eating meals with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) In my family, we are expected to be home for dinner.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I am often too busy to eat dinner with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Kinect-Ed Post-test Survey Final Version

In order to keep track of your answers please create a 4 digit ID.

What day of the month were you born? Ex: If your birthday is March 6 <u> 0 </u> <u> 6 </u>	
What are the last 2 digits of your phone number? Ex: Your phone number is 987-6543 <u> 4 </u> <u> 3 </u>	

You can answer the following questions by placing an X or \surd in the . Thank you for your help!

A. Demographics

1) What is your age?

- 9 10 11 12 13 14

2) Are you...?

- Male
 Female

3) What grade are you in?

- 4 5 6 7 8

4) Would you consider yourself...?

- White (for example, Canadian, English, French, Italian, Polish, etc)
 Black (for example, African-Canadian, African-American, African, Nigerian, etc)
 Chinese
 Arabic (for example, Lebanese, Jordan, Palestinian, Egyptian, Iraqi, Syrian, etc)
 South Asian (for example, Irani, Indian, Pakistani, Sir Lankan, Nepali)
 Aboriginal (for example, First Nations, Metis, Inuit)
 Other: _____
 I don't know

B. Food Preparation

1) Do you cook?

- Yes, often
 Sometimes
 No, never

2) Do you prepare/make food with your family?

- Yes, often
- Sometimes
- No, never

3) Do you prepare/make food with your friends?

- Yes, often
- Sometimes
- No, never

4) How often are you involved in preparing/making food?

- More than once/day
- Daily
- 2 to 6 times a week
- Once a week
- Once a month
- Rarely or never

5) In the past week, how many times did you help to shop for groceries?

- Never
- One time
- More than one time

6) In the past week, how many times did you help prepare/make food for dinner?

- None
- 1-2 times
- 3-4 times
- 5-6 times
- 7 times

7) Who does most of the planning or preparing of meals in your home?

- Mother/ Stepmother
- Father/ Stepfather
- I do
- Grandmother/ Grandfather

- Sibling
- Nanny or babysitter
- Other: _____
- I don't know

8) How often would you like to be involved in preparing/making food?

- More than I am now
- Less than I am now
- As much as I am now

9) Check the box that best describes how you feel about the following statements:

How do you feel...	Really don't like	Don't like	Kind of like	Really like	I don't do
a) about cooking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) about the taste of foods that you have helped prepare/make?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) about making food with your friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) about making food with your family?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) about making snacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

10) How much do your parents/stepparents/guardians encourage you to help out in the kitchen?

- Strongly encourage
- Somewhat encourage
- Somewhat discourage
- Strongly discourage

11) Check the box that best describes how you feel about the following statements:

I can...	Very Hard	Hard	Easy	Very Easy
a) make a meal with fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) make a meal with vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) help make a family meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) cut up food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) When making meals, what type of food preparation do you get to do? (check all that apply)

I am not involved in making food

	Do	Don't do
Cutting up foods	<input type="checkbox"/>	<input type="checkbox"/>
Peeling fruits/vegetables	<input type="checkbox"/>	<input type="checkbox"/>
Measuring the ingredients	<input type="checkbox"/>	<input type="checkbox"/>
Mixing the ingredients	<input type="checkbox"/>	<input type="checkbox"/>
Using the can opener	<input type="checkbox"/>	<input type="checkbox"/>
Use oven/stove	<input type="checkbox"/>	<input type="checkbox"/>
Put together the food/meal	<input type="checkbox"/>	<input type="checkbox"/>
Setting table	<input type="checkbox"/>	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	<input type="checkbox"/>
Grilling/ BBQ	<input type="checkbox"/>	<input type="checkbox"/>
Putting together a pre-made meal	<input type="checkbox"/>	<input type="checkbox"/>

C. Sandi's Visit

1) How much did you enjoy or not enjoy Sandi's visit?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4
Didn't Enjoy			Really Enjoyed

2) What did you like best about Sandi's visit?

3) How much did Sandi motivate or not motivate you to start preparing/making meals?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4
Didn't motivate			Couldn't wait!

4) Since Sandi's visit to your school, did you have a talk with your parents about getting in the kitchen and helping to make meals?

Yes

No

What did you talk about?

5) Have you changed any health behaviours as a result of Sandi's visit? (For example: eating healthier, not eating certain foods)

Yes

No

What have you changed?

6) Did you share or show anyone else the booklet that Sandi gave you?

No

Yes

b) If yes who? (check all that apply)

Parents/guardians

Aunts/uncles/cousins

Siblings

Friends

Grandparents

Other: _____

What did they think about it?

D. If you DID cook one of Sandi's recipes CONTINUE answering the following questions (if not skip this section and, go to section F)

Choosing one meal/recipe that you made in the past month:

1) What did you like about the recipe?

2) What did you get to do?

- Cut up foods Used the can opener Peeled vegetables
 Used oven/stove Measured the ingredients Put together the food/meal
 Mixed the ingredients Set the table Other: _____

3) How easy or hard do you think the recipe was to prepare?

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1 | 2 | 3 | 4 |
| Very Hard | Hard | Easy | Very Easy |

4) Who ate the meal? (check all that apply)

- Parents/guardians Aunts/uncles/cousins Other:
 Siblings Friends _____
 Grandparents Only me

5) Would you like to try more of Sandi's recipes or other recipes soon?

- Yes No

Why?

E. If you DIDN'T cook one of Sandi's recipes from the booklet COMPLETE this section:

1) Why didn't you cook one of Sandi's recipes? (check all that apply)

- I was too busy
- I didn't like the foods in the booklet
- We don't usually have those ingredients in my house
- I don't like cooking
- I didn't think I could do it well enough
- I have food allergies
- I was too lazy
- Other: _____

2) Do you plan on trying one of Sandi's recipes or other recipes in the soon?

- Yes No

Why or Why not?

F. Family Meals

1) Typically, how many days per week do you eat dinner/supper with at least one parent/guardian?

- 0-2 days/ week
- 3-5 days/week
- 6-7 days/ week

2) How strongly do you agree or disagree with the following statements about mealtimes in your family?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) I enjoy eating meals with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) In my family, we are expected to be home for dinner.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) I am often too busy to eat dinner with my family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

3) How strongly do you agree or disagree with the following statements about mealtimes in your family?

In my family...	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
a) it is important that my family eat at least one meal a day together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
b) mealtime is a time for talking with other family members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
c) my family wants to sit down together, eat and talk, but find it frustrating that we can't seem to pull that off	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
d) we often watch TV while eating dinner	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
e) it is often difficult to find a time when we can sit down to a meal together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
f) dinner time is about more than just eating food; we all talk with each other	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
g) different schedules make it hard for us to eat meals together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
h) eating brings people together in an enjoyable way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
i) we don't have to eat meals at the kitchen/dining room table	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
j) it's ok to have the television on during meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
k) families that eat together often eat healthier meals	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

VITA AUCTORIS

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