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DEVELOPMENT AND EVALUATION OF A TOOL TO ASSESS
TELEVISION VIEWING DURING MEALS AND FRUIT AND
VEGETABLE CONSUMPTION AMONG FAMILIES RECEIVING
SERVICES FROM EFNEP, FNP, AND WIC

by

Rebecca R. Howden

A Thesis Submitted in Partial Fulfillment
Of the Requirements for a Degree with Honors
(Dietetics)


The College of Consumer and Family Sciences

Purdue University

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Approved by



Advisor: Barbara J. Mayfield

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Abstract

Studies have shown an association between the frequency of family meals and the meal time environment and the dietary quality of those meals, including the presence of fruits and vegetables. One aspect of meal time environment that may be an important factor is television viewing during meals. The purpose of this project was to develop and evaluate a family meal assessment tool to measure television viewing during meals and fruit and vegetable consumption within families served by the programs targeted by Indiana's State Nutrition Action Plan (SNAP).

A quantitative survey of family meal assessment questions was pilot tested with a sample of 144 participants in the three programs targeted by SNAP. The survey was then administered to 20 parents of children enrolled in Purdue's Child Development lab schools to determine test-retest reliability. This sample completed the assessment twice, one week apart. A qualitative survey of how to most efficiently collect participant and intervention data was also administered. Six professionals and paraprofessionals representing the targeted populations evaluated the cover information page in a focus group setting, and 3 did so in open-ended interviews.

To analyze data, principal component analysis (PCA), paired t-tests and Pearson correlation coefficients, and separate linear regression analysis were completed. The findings of this study were that all questions measuring television viewing during meals showed significant test-retest reliability ($p < .05$). Increased television viewing during meals was negatively associated with fruit and vegetable intake ($p < .01$).

Questions were selected for the final SNAP Family Meal Assessment Tool based on response failure rates, test-retest reliability, and the relationship of family meal measures to fruit and vegetable intake. The family meal assessment questions fit on one page for ease and efficiency. The tool includes a cover page to collect data about participants and family meal education. In the future, this tool will be administered as a pretest before family meal education and again as a post-test at a follow-up visit. The tool can be easily administered and completed to effectively evaluate the impact of SNAP family meal education.

Statement of Purpose

The purpose of this honors project was to aid in the development of an assessment tool to evaluate the effectiveness of Indiana's State Nutrition Action Plan (SNAP). The goal of SNAP is to increase fruit and vegetable intakes through the promotion of family meals among participants served by the Expanded Food and Nutrition Education Program (EFNEP), the Family Nutrition Program (FNP), and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (see Appendix A for more details about the participants in each program). To achieve this objective, family meal education is provided by each of these programs to their participants. The purpose of the assessment tool will be to evaluate the impact of the education provided on family meal frequency, characteristics of the mealtime environment, television viewing during meals, and fruit and vegetable intakes. For efficiency and effectiveness, the tool must be brief, no more than one page long, accurate, and reliable.

This honors project specifically focused on the role of television within the family meal and its association with fruit and vegetable consumption in children. Research has shown that there is a negative association with the amount of television viewed during family meals and the consumption of fruits and vegetables among children. This aspect of family meals was the main focus throughout the course of this honors project as an effective assessment tool was developed. The desired outcome of this honors project was an assessment tool that accurately measures television viewing during family meals and fruit and vegetable intake.

Upon completion of this honors project, this tool will be administered to parents participating in WIC, EFNEP, and FNP both before and after receiving family meal education, according to the protocol established by each program. This tool will be used to determine the impact of the education.

Literature Review

For children to achieve optimal health and prevent health problems, they need a variety of fruits and vegetables in their diets (1). Many studies have shown that most children in the United States are not meeting their recommended dietary needs (2,3). In order to evaluate this issue, research has been done to study the factors of the frequency of family meals and the meal time environment and how each of these factors impact the amounts of fruits and vegetables consumed by children. This review of the literature will look closely at the occurrence of television viewing during the family meal and how this impacts the intake of fruits and vegetables of children and their families.

According to the 2005 Dietary Guidelines as illustrated by MyPyramid, the daily recommendations for fruit and vegetable consumption include at least 2.5 cups of vegetables and 2 cups of fruit in regards to a standard 2000 Kcal diet (1). However, the recommendation for children between the ages of 2 and 18 can range anywhere from 1 cup of fruit and 1 cup of vegetables to 2.5 cups of fruit and 4 cups of vegetables, based on a recommended 1,000 to 3,200 Kcal per day (4). Many families are not achieving these recommendations (2,5), especially families who are of lower socioeconomic status (6). According to a study by the Better Health Foundation, only 38 percent of Americans eat the recommended amount of vegetables, and only 23 percent meet the recommended daily amount of fruit (6). A study led by Barbara A. Dennison PhD, examined children's diets in particular, and described them as having: "low intakes of fruits and vegetables, which were associated with inadequate intakes of vitamin A, vitamin C, and dietary fiber, in addition to high intakes of total fat and saturated fat." (2). Fruits and vegetables are important because their nutrients promote healthy living and give protective benefits against certain chronic diseases (7). Therefore, their absence in the diet has been linked to the occurrence of several prominent diseases, such as cardiovascular disease and some cancers (8), which in turn is putting an increasing burden on our country's healthcare system (9).

One reason researchers have found it particularly important to evaluate children's dietary patterns, is that it has been shown that the habits formed in childhood have a strong influence on their adult eating patterns (10). It has also been shown that there are significant decreases in daily consumption of fruits and vegetables as a child progresses from early adolescence (defined as the junior high school age) to middle adolescence (high school age), and then again as they progress to late adolescence (post high school age) (5). These data are accompanied by studies which have indicated that adolescents in general are progressively eating less fruits and vegetables than their adolescent predecessors (5). This may have to do with the trend that as a child ages, their increased independence, mobility (ability to drive), and involvement in extra curricular activities leads to a decreased number of meals consumed with their families (11). These results suggest the potential benefits of interventions with adolescents on an environmental and developmental level to counteract these trends, preferably before the child reaches adolescence (5).

In addition, studies have shown the importance of parental role-modeling in the development of healthy dietary behaviors of children. Findings indicate that what foods parents eat, and therefore expose their children to, are the foods their children become familiar with and choose to consume when they are old enough to make their own choices (12). According to Dennison, the best ways to increase a child's consumption of fruits and vegetables is to "start young... parents should try to make a variety of fruits and vegetables available, and should try to act as role models by eating fruits and vegetables themselves." (2).

Overall, the main message of many of these studies is that there is a strong positive association between the frequency of meals eaten as a family, and the quality of dietary intake, especially in fruits and vegetables, but also in grains, and foods rich in calcium, iron, folate, fiber, and vitamins A, E, C, and B6 (11). These results suggest that in order to improve the overall dietary health of families, it is important to focus on encouraging them to eat meals together as a family.

Recent studies have shown that not only is the frequency of family meals important, but also the environment in which a family meal is eaten (8, 13). There are four main aspects of family meals that have become particularly of interest to researchers. These aspects include how many meals a family eats together, whether or not the family argues or tries to solve family conflicts during meals, whether or not the meal is planned in advance, and how often the television is on during family meals. (8)

The role of the television has had a particularly significant impact on the dynamics of the family meal. For many families within our current American culture, it has become acceptable to leave the television on all day long. According to the American Academy of Pediatrics (AAP), the recommended amount of total media time (including television viewing) should be limited to 1-2 hours of quality programming per day (14). Many studies have shown, however, that the actual numbers are exceeding these recommendations.

A study conducted by Rideout and colleagues has shown that two thirds of children between the ages of 6 months and 6 years watch television every day. They also found that of children who use screen media daily, 83% of these children spend an average of approximately 2 hours doing so (15). Another statistic provided by this study showed that a third of children under the age of 6 years old have been permitted to have their own television set in their rooms, and this also results in children who watch an average of 5.5 more hours of television a week than those who do not have a television set in their room (15, 16). Parents have come to believe that the television is a parenting tool, with about 38% of them believing that it is a positive tool in helping their child to learn (compared with 31% believing the opposite) (15). This is reflected in the observation that within this study, over 40% of children in both the 2-3 and 4-6 year old categories are reported to watch more than 2 hours of television a day. In addition, about 30% of families have the television on during most or all of their meals, according to this study (15).

Because the media has such a strong presence in the lives of families, it is likely that it also has a large influence on the routines of these families as well as their attitudes about eating. A study conducted by Gentile and Walsh found that 78% of parents admit that their children at least “sometimes” verbally express a desire to buy products they have seen while watching television. In addition, about 42% of the same set of parents said that their children at least “sometimes” copy characters that they have seen on television (16). This indicates that children are influenced in both their preferences and their behaviors by what they are exposed to while watching television.

A study by Katherine A. Coon and colleagues showed the amount of television watched by a family during meals was negatively associated with the amount of fruits and vegetables the family ate, but positively associated with fat and soft drink consumption (11,13). The same study showed that about 40% of families surveyed had the television on during meals at least 4 times a week (13). An additional study by Rideout and colleagues using a national survey found that 63% of 8-18 year olds report that the television is “usually” on during meals (15).

These statistics have led other researchers to look more closely as to why this may be occurring. The role of television has several sources of impact on the components of a typical family meal. First of all, if a child is exposed to any amount of regular television viewing, they cannot help but be exposed to the plethora of commercials in-between their favorite programs. One study showed that out of the 13 low-nutrient foods that were included in the study, children recognized about 6 of them as ones they had seen advertised on television, and of those recognized products, parents were reported to have purchased approximately half (17). This implies that television has a large impact on what food products children are exposed to on a daily basis. Once children are exposed to certain foods, it increases the likelihood that they will then ask their parents for those foods, which in turn increases the chances their parents will buy these foods for them (17).

In light of this relationship between foods advertised and foods purchased and therefore consumed, a lack of fruit and vegetable advertisements could be one link as to why fruits and vegetables are consumed on such a low basis. The foods that are being advertised heavily are the foods that are being consumed the most frequently, and are generally ready-to-eat cereals, snacks, convenience foods, shortcuts for home meal preparation or ready-made sauces and fast foods (13). Therefore, because television advertisements are promoting foods that are generally energy dense, not nutrient dense, claims have been made that television food advertising is in direct conflict with national recommendations, and therefore promoting unhealthy eating patterns (18).

Another study by Coon et al. showed that generally speaking, the less the parents know about nutrition, the more likely the family is to view television during their family meals (13). In addition, the frequency at which parents prepare meals that are “quick and easy” is positively associated with the amount of television allowed at the dinner table. These results point to the possibility that parents are allowing television to shape their family’s concept of a “normal meal” by allowing television to be a part of the family meal (13). It is important for families to put a barrier between the personal food culture of their families, and the food culture promoted on television, so these cultures stay separate, and do not begin to become one and the same (13). If these results are merely an association, and not a result of causation, these data still give useful information on the types of families we should be targeting for dietary interventions to improve the dietary quality of family meals.

An increased frequency of family meals has been shown to correlate with several variables related to increased well-being of children and adolescents. These benefits of family meals include higher academic performance, decreased substance use, decreased depressive symptoms, and decreased low self esteem (19). Therefore family meals can be thought of as a protective factor for children and adolescents for each of these behaviors (19). These findings are thought to be a result of increased family communication and connectedness that occurs with an increase in family meals. Because television can be a

barrier for family meal communication, it is possible that television viewing during family meals may reverse the positive effects of family meals on the overall well-being of children and adolescents.

In conclusion, the evidence suggests an association between the lack of fruits and vegetables consumed by children and the amount of television watched during their family meals. The objective of this study was to assess the presence and strength of the association between fruit and vegetable consumption and television viewing during meals among families with limited resources. A secondary aim was to select the best methods for measuring this phenomena as part of the evaluation of nutrition interventions within programs such as EFNEP, FNP, and WIC. Using the information from this study and the recommended measure, these programs would be able to determine types of action necessary to reverse this problem.

Methods/Methodology

Subjects and recruitment

Data were collected from four different samples of subjects. All tools and protocols were approved by the Committee on the Use of Human Research Subjects. For samples 1 and 2, participation was voluntary and oral or written consent was obtained in compliance with the Purdue University Institutional Review Board guidelines.

Sample 1, Pilot testing questionnaire sample

Participants in this sample were a convenience sample of individuals participating in EFNEP, FNP, and WIC. Staff members from these programs were asked to select one week of their choice within the timeframe of July 24, 2006 to August 11, 2006 to recruit program participants. The final sample included 144 participants.

Sample 2, Test-retest sample

The second sample was obtained through Purdue University's Child Development Laboratory, a facility providing child care services for children between 6 weeks and 5 years. Parents of children under the age of five were surveyed from October 21, 2006 to November 18, 2006. The final sample included 20 parents.

Sample 3, Focus group

The third sample was composed of professionals and paraprofessionals representing the three targeted programs of SNAP, which are EFNEP, FNP, and WIC. They were comprised of registered dietitians, nutritionists, and trained paraprofessionals. These staff work with participants in clinic settings both individually and in groups, and through home visits.

Sample 4, Open ended interviews

The fourth sample was composed of professionals and paraprofessionals representing the three targeted programs of SNAP, which are EFNEP, FNP, and WIC. They were comprised of registered dietitians, nutritionists, and trained paraprofessionals. These staff

work with participants in clinic settings both individually and in groups, and through home visits.

Staff members were identified by supervisors within each program, who then provided contact information to call or meet with their staff. Staff members included only those who will be administering the assessments when the tool is completed. Recruitment took place primarily over the phone or e-mail. Staff members were invited to be interviewed. When invited, they were provided with information about the purpose of the SNAP project and the reason for the assessment tool. This sample included 3 women participants.

Development of assessment tool and pilot testing

The development of the SNAP Family Meal Assessment Tool began in 2006 under the direction of the Indiana SNAP program committee to evaluate family meal frequency, the quality of the family meal environment, and fruit and vegetable intake. Former honors student, Emily Hutson, performed the initial data collection and analysis. The assessment tool (see Appendix B) was originally four pages in length and included ten questions, derived from validated assessments used in family meal research and intake assessments (questionnaires) currently used by the WIC, FNP, and EFNEP programs. The questions and formats were modified in some cases to meet the needs of this project. Three questions asked about family meal frequency with a third question which assessed frequency and environment of family meals in a pictorial format, four questions asked about the family meal environment including television viewing, and three addressed fruit and vegetable intake. This data was collected from Sample 1 and Sample 2.

Administration of Questionnaires

Sample 1, Pilot testing questionnaire sample

During the selected week, staff members were to administer the pilot questionnaire to participants as part of the routine program procedures (individual counseling, in home visits, or classes) and incorporate the activity as part of a discussion about family meals. Participants were asked if they would like to provide input into the development of a

questionnaire about family meals, provide their opinions about a handout about family meals, and/or select a slogan for promoting family meals.

Sample 2, Test-retest sample

This sample was invited to participate and completed the survey two times, one week apart. Parents were invited to participate with a letter left in the parents' mailboxes. The first survey was distributed in a parent's mailbox once a completed consent form was received. A second survey was placed in the same parents' mailboxes one week later. In both cases, the survey was self-administered. The final sample included 20 parents.

Current development and evaluation of assessment tool

The SNAP committee determined that the final tool should not exceed one page for the family meal assessment questions and include a cover page for the purpose of collecting information about the program participants and the family meal education provided.

Therefore, a subset of the original questions was to be selected to reduce the pages of assessment questions from four to one while selecting the questions which best measured family meal frequency, characteristics of the family meal environment including television viewing, and fruit and vegetable intake and could be used to evaluate the impact of family meal education.

Principal component analysis (PCA), paired t-tests and Pearson correlation coefficients, and separate linear regression analysis were completed using SPSS 16.0 for Windows. Statistical analysis was used to determine which questions were most effective for this purpose, and a new assessment tool was developed with the use of these selected questions. For this honors project, the questions that were analyzed were those related to television viewing and fruit and vegetable consumption.

Current development and modification of cover information page

One objective in the development of the assessment tool, was to determine the efficiency and effectiveness of the information collection page, which was completed by Sample 3

and Sample 4. We used a combination of focus groups, and interviews with professionals and paraprofessionals within Sample 3 and Sample 4 to determine whether or not the assessment tool is easily understood and administrated as well as an effective way to collect data to evaluate Indiana's SNAP.

Members of Sample 3 and Sample 4 provided input on the final version of the cover information page of the assessment tool. The purpose of this page is for collecting information about participant demographics and the educational intervention. The original version of this page was developed by the SNAP committee comprised of representatives of the Indiana Department of Education, WIC, EFNEP, FNP, and Purdue's Foods and Nutrition Department, based on results of a pilot test of the document in summer 2006. A copy of the original first page of the assessment tool is attached (see Appendix C).

Input was first collected from a focus group composed of members of Sample 3 held on December 4, 2008 when the advisory board for EFNEP and FNP met in Marion County. This meeting was led by Angie Abbott, state EFNEP/FNP director. Assisting her in a discussion of the tool were two F&N honors students, Chelsea Kingston and Rebecca Howden. The questions used for that discussion are attached (see Appendix D).

Based on the advisory board's input, further modifications to the first page of the assessment tool were made. Interviews with members of Sample 4 were held between January and February 2008, and included the same questions as the focus group (see Appendix D). Interviews provided confirmation of the results of findings with Sample 3, additional input for modifications, as well as an opportunity to practice administering the tool with participants. Sample 4 shared their findings and/or allowed observation of participant encounters.

Results of this focus group and open ended interviews were summarized and shared with the State SNAP committee via a conference call to determine the final wording and layout of the assessment tool.

Data Analysis

All quantitative variables were tested for adhering to a normal distribution and no variables needed transformation. The raw data responses for statements related to television practices and family meals on the questionnaire used in pilot testing were summed by subscale and then an average response was calculated for each subscale. For example, the responses were coded as 1 to 4 or 1 to 5. Where necessary the responses were reverse coded to maintain consistency in direction of the responses. Therefore, a 5 statement subscale summary would be the sum of the responses to the 5 statements divided by 5. The subscales represent an average response from several statements; therefore, a subscale was calculated if all statements within a subscale were complete. All quantitative variables were assessed for adhering to a normal distribution and no transformations were needed. As a measure of internal consistency among the psychosocial factors in the pilot testing questionnaire, principal component analysis (PCA) was completed. A higher Cronbach's alpha value from the PCA indicates better internal consistency. Values between 0.7 and 0.9 are considered most desirable. This analysis was completed to ascertain the strength of using multiple statements compared to one or two statements. For the test-retest reliability of the questionnaire, paired-t tests were done and Pearson correlation coefficients.

The response scale for eating meals together, i.e., breakfast, lunch, and dinner, was examined as never, 1-2 days, 3-4 days, 5-6 days, and 7 days. Alternatively, this was recategorized as never, 1-4 days, 5-6 days, and 7 days; and never to 2 days, 3-6 days, and 7 days. The response scale to eat together as a family was also recategorized as rarely to 2 times/week, 3-4 times/week, and greater than 5 times/week. For estimates of offered and consumed fruit and vegetable intake, responses were maintained as quantitative fields, i.e., 0 to 5 or more times per day. For testing construct validation of the association between the outcomes of fruit and vegetable offering and consumption and the exposures of television practices and family meals, one-way analysis of variance was used. Statistical significance was set at $p \leq 0.05$.

Results

Statistical results

The pilot testing sample consisted of 147 participants. Three surveys were completely blank and therefore eliminated from the analysis. The final sample size was 144 participants. The test-retest sample included 20 adults that completed two questionnaires with one week in between. The focus group used 7 participants, and 3 open ended interviews were conducted.

The numbers of blank responses of individual questions of the questionnaire are shown in Table 1. The number of blank responses ranged from a low of 1% to a high of 33%. The failure rate for question 7 was reported by the highest and lowest failure rates for the 21 possible response options (see question 7 in Appendix B).

The reliability of each question in the assessment was tested with the test-retest sample. Parent responses were highly correlated between the two completion times, with r values for most questions well above 0.5 ($p < 0.05$). Each of the questions evaluated by this project yielded significant values (see Table 2), and all but two were well above 0.6. The results of the paired t -tests also indicated no significantly different questions. For the paired t -tests we prefer a p -value to be $> .05$ due to the desire of constancy between results of the non-consecutive surveys.

In regards to the PCA Analysis, only two of the four scales yielded a Cronbach's alpha in the desired range of 0.7 to 0.9 (see Table 5). When the selected scale (see Table 4) was compared to fruit and vegetable offer and consumption questions, the Pearson Correlation Coefficients were each significant, as indicated by a negative value. In addition, when comparing the scale to each of the fruit and vegetable offer and consumption questions, the results were significant as represented by $p \leq 0.05$ (see Table 3).

When comparing television viewing questions to questions assessing fruit and vegetable consumption through post-hoc analysis, only question 3 consistently yielded significant results of $p \leq 0.05$ (see Table 3).

Focus group and open ended interview results

The collective results of the focus group and open ended interviews indicated that the cover information page would be effective and efficient in collecting the desired information. Each provided information on changes in wording, organization, or formatting that could improve the tool. Specific findings included the need to improve the clarity of the fact that it is to be filled out by staff members, and not participants. Another area of clarification related to the desired order of the pretest, education, and post-test during the administration. It was also suggested to modify the font sizes if possible to larger and more consistent sizes to improve the readability of the tool. Finally, it was also confirmed by participants that collecting age and ethnicity of clients would be an important part of this cover information page of the assessment tool and gave practical advice for how to incorporate those specific questions.

Table 1. Description of family meal assessment questions by type of measure and number of blank responses among Sample 1, in the pilot testing of the Family Meal Assessment Tool (n = 144)

Type of Family Meal Question	Description of Question	Question Number	Number of Blank Responses	% Blank Responses
Frequency	Eat breakfast together	1a	8	5.6
	Eat lunch together	1b	10	6.9
	Eat dinner together	1c	7	4.9
	Eat together as family	2	1	0.7
Mealtime Environment	TV during meals	3a	6	4.2
	Enjoy eating with children	3b	6	4.2
	Sit with children while eating	3c	6	4.2
	Plan ahead for family meals	3d	5	3.5
	Importance of eating 1 family meal	4a	18	12.5
	Watch TV while eating	4b	20	13.9
	Sit and eat meals with child	5a	21	14.6
	Child watches TV while eating	5b	22	15.3
	TV on during	6	19	13.2
Frequency and Environment	Child eats meals in following ways (minimum failure rate)	7	44	30.6
	Child eats meals in following ways (maximum failure rate)	7	47	32.6
Fruit and Vegetable Consumption	Offer 5 fruit and vegetable servings per day	8a	16	11.1
	Child eats 5 fruit and vegetable servings per day	8b	18	12.5
	Offer fruits to child	9a	16	11.1
	Offer vegetables to child	9b	16	11.1
	Offer 100% fruit or vegetable juice to child	9c	15	10.4
	Child eats fruits	10a	21	14.6
	Child eats vegetables	10b	17	11.8
	Child drinks 100% fruit or vegetable juice	10c	17	11.8

Table 2. Reliability (test/retest) of responses between two Family Meal questionnaires completed one week apart by parents (n=20) of children participating in a university-run childcare center

Question	Responses					Paired <i>t</i> -test <i>p</i> -value	
	Always	Usually	Not usually	Never	Correlation coefficient <i>r</i> (<i>p</i> -value)		
3. Below are statements about feeding your child. Check the box in each row that describes how often this statement is true.							
3a. Do you usually watch TV during meals?	Always	Usually	Not usually	Never	.834 (<.001)	.577	
4. How strongly do you agree with the following statements about mealtime in your family?							
4b. We often watch TV while eating meals	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	.492 (<.05)	1.000	
5. Below are statements about feeding your child. Circle the letter that tells how often you do what it says.							
5b. My child watches TV while eating.	Almost always	Often	Some-times	Rarely	Never	.666	
6. How frequently is the television on during meals?							
	All meals	Most meals	Some meals	Rarely or never at meals		.330	
8. Circle the one best answer for each statement:							
8a. I offer my child 5 fruit and vegetable servings a day	Rarely or never	Some of the time	About ½ the time	Most of the time	Almost always	.541	
8b. My child eats 5 fruit and vegetable servings a day	Rarely or never	Some of the time	About ½ the time	Most of the time	Almost always	.267	
9. How many times a day do you offer the following foods to your child:							
9a. Fruits (fresh, canned, frozen, or dried)	0	1	2	3	4	5 or more	.171
9b. Vegetables (fresh, canned or frozen)	0	1	2	3	4	5 or more	.527
9c. 100% fruit or vegetable juice	0	1	2	3	4	5 or more	.205
10. How many times a day does your child eat the following foods:							
10a. Fruits (fresh, canned, frozen, or dried)	0	1	2	3	4	5 or more	1.000
10b. Vegetables (fresh, canned or frozen)	0	1	2	3	4	5 or more	1.000
10c. 100% fruit or vegetable juice	0	1	2	3	4	5 or more	.331

Table 3. The relationship of parent self-report of television viewing during family meals and offerings and consumption of fruits and vegetables among their children participating in WIC¹, FNP², and EFNEP³ (n=144)

TV Assessment Questions	Times per day offered to child		Parents' Self Report		Times per day consumed by child	
	Fruits, Vegetables, and Juices	Fruits and Vegetables	Fruits, Vegetables, and Juices	Fruits, Vegetables, and Juices	Fruits, Vegetables, and Juices	Fruits and Vegetables
	← Mean (standard deviation) ⁴ →					
3a. Do you usually watch TV during meals? (when feeding your child)	6.8 (3.7) ^a (n=16)	4.3 (2.7) ^a (n=16)	6.3 (3.4) ^a (n=16)	3.8 (2.3) (n=16)	8.0 (3.2) ^a (n=39)	4.4 (2.3) (n=38)
	10.1 (3.0) ^b (n=45)	6.3 (2.2) ^b (n=45)	9.1 (3.1) ^b (n=43)	5.8 (2.5) (n=43)		
	8.4 (4.4) ^a (n=24)	5.8 (3.0) ^a (n=24)	8.2 (4.6) ^a (n=24)	5.7 (3.0) (n=24)		
p-value	.004	.017	.012	.012		.054
4b. In my family, we often watch TV while eating meals.	9.4 (3.7) (n=27)	6.3 (2.5) (n=27)	9.3 (3.9) (n=25)	6.2 (2.6) (n=25)	9.7 (3.5) (n=30)	5.5 (2.9) (n=29)
	8.1 (3.6) (n=32)	5.3 (2.7) (n=32)	7.0 (3.1) (n=32)	4.4 (2.4) (n=32)		
	7.6 (3.8) (n=20)	5.0 (2.8) (n=20)	6.9 (3.3) (n=20)	4.6 (2.3) (n=20)		
p-value	.129	.190	.034	.054		.054

Table 3. – Continued

TV Assessment Questions	Parents' Self Report			
	Times per day offered to child Fruits, Vegetables, and Juices	Fruits and Vegetables	Fruits, Vegetables, and Juices	Times per day consumed by child Fruits, Vegetables, and Juices
	← Mean (standard deviation) ⁴ →			
5b. My child watches TV while eating.	7.6 (3.4) (n=60)	4.9 (2.5) (n=60)	7.0 (3.3) (n=61)	4.5 (2.2) (n=61)
Often	7.7 (2.3) (n=24)	5.3 (2.0) (n=24)	7.3 (2.3) (n=23)	4.9 (2.0) (n=23)
Sometimes	9.8 (3.7) (n=18)	6.2 (2.8) (n=18)	7.8 (3.4) (n=16)	4.7 (2.9) (n=16)
Rarely	9.0 (3.5) (n=5)	6.0 (2.3) (n=5)	8.2 (3.5) (n=5)	5.5 (2.4) (n=5)
Never	8.8 (4.3) (n=3)	6.0 (3.0) (n=3)	8.8 (4.3) (n=2)	5.9 (2.9) (n=2)
p-value	.284	.553	.446	.281
	Pearson Correlation Coefficient (p-value)			
Scale: Perception of TV viewing during family meals ⁵	-.23 (.016) (n=108)	-.25 (.011) (n=108)	-.29 (.003) (n=105)	-.30 (.002) (n=105)

1. Special Supplemental Nutrition Program for Women, Infants, and Children

2. Family Nutrition Program

3. Expanded Food and Nutrition Education Program

4. Columns with different letters represent statistically significant different values based on post-hoc analysis (Bonferroni)

5. This is a scale comprised of responses to two questions; question 3a (“Do you usually watch TV during meals?” Response options: Always, Usually, Not Usually, or Never) and question 4b (“In my family, we often watch TV while eating meals” Response options: Strongly disagree, Somewhat disagree, Somewhat agree, or Strongly Agree), on which PCA Analysis was performed, where negative numbers indicate a more positive mean environment which correlates to a higher fruit and vegetable consumption (see Table 4)

Table 4. Scale comprised of questions related to perception of TV viewing during family meals (F-Scale)

Based on questions regarding TV and Meals

3a. TV during meals (4 point scale; Always, Usually, Not Usually, Never)

1. Do you usually watch TV during meals? (when feeding your child)

4b. TV during meals (4 point scale; Strongly Disagree, Somewhat Disagree, Somewhat Agree, Strongly Agree)

1. In my family, we often watch TV while eating meals.

Table 5. Comparison of scales measuring various concepts related to the family meal environment

Question	Concepts (Scales)			
	Scale A ¹	Scale C ²	Scale D ³	Scale F ⁴
3a. Do you usually watch TV during meals?	X		X	X
3b. Do you enjoy eating meals with your children	X		X	
3c. Do you sit with your children when they eat?	X		X	
3d. Do you plan ahead for family meals?	X		X	
4a. It is important that the whole family eat at least one meal a day together		X	X	
4b. We often watch TV while eating meals		X	X	X
Cronbach's alpha	.62	.39	.70	.85

1. Meal environment including questions related to television viewing
2. Importance of family meals including questions related to television viewing
3. All questions
4. TV and meals

Discussion

Blank response rates

Based on the percentages shown in Table 1, Question 7 was deemed too difficult and eliminated prior to analysis. In this question, parents were asked to total the ways their child ate each meal in a given week based on pictures provided. The surveys that had totals higher than 21 were considered to be incorrectly answered and are represented in the number of blank responses (see Table 1). This question was modified after administered to the pilot testing group to improve the ease of the question (see Appendix B), but even the modified version yielded high blank response rates (a range of 30.6-32.6% blank response rates in the pilot sample and 18% failure rate in the test retest sample). In addition, several participants indicated that this question was too confusing, and many participants did not fill it out at all. Questions 8 through 10 all had high blank response rates, which may be attributed to the fact that they were on the last page. Conversely, questions 1 through 3, which all appeared on the first page of the questionnaire, all had the lowest blank response rates. This therefore provides even more justification to the concept of narrowing the assessment tool down to one page of questions.

Questions related to television viewing practices

To assess the construct validation of the exposures of television viewing practices when compared to fruit and vegetable consumption, only questions regarding television viewing and fruit and vegetable consumption were included (3a, 4b, 5b, 6, 8, 9, & 10). For questions related to family meal frequency as well as the other questions not addressed in this project (1, 2, 3b-d, 5a), please see the results of Chelsea Kingston's honors thesis (20).

Questions regarding television viewing included questions 3a, 4b, 5b, and 6. In addition to having high test-retest significance, both questions 3a and 6 yielded high correlation coefficients. The results of the PCA analysis (see Table 3) showed that question 3a was significant compared to all responses to fruit and vegetable consumption questions 9 and

10. Question 4b was only significant when compared to the summary of all responses of Q10, and 5b was not significant in any case. Question 8 was not used for comparison because of its non-significant results when compared to family meal frequency question 1 through ANOVA analysis. Further analysis of question 8 was therefore not completed.

Regarding a question on television viewing, question 3 was statistically the best choice to include in the final tool, due to its significant values for test-retest reliability and PCA analysis.

In addition to analyzing television viewing questions separately, a scale was created to evaluate questions 3a and 4b together (see Table 4). Initially, seven scales were created by grouping survey questions together based on the aspect of the study they measured. Scales were created in order to explain the variance that exists in the data, but with fewer variables than the original set of data. Cronbach's alpha was then calculated for each of the scales, to determine which scales "hang together best" (the higher the number, the better the questions hang together) (see Table 5). Only scales A, C, D, and F were relevant to this project. To view the results of scales B, E, and G, please see the honors report by Chelsea Kingston (20).

PCA analysis was performed to explain variation between psychosocial factors in the questionnaire. The variable that was specifically looked at in this PCA analysis was television viewing. Based on the results of this analysis, Scale F (composed of questions 3a and 4b) measuring the concepts of television and meals was selected, due to its high Cronbach's alpha score (see Table 4).

Once the scale was selected, it was then able to be compared to questions 9 and 10, which were measures of fruit, vegetable, and juice consumption through PCA analysis (see Table 3). Through this, Pearson's Correlation Coefficients were able to be derived. The results that are negative numbers indicate a more positive mean environment which

correlates to a higher fruit and vegetable consumption. Each comparison yielded significant results of $p < .05$.

Questions related to fruit and vegetable offer and consumption

Questions regarding fruit and vegetable consumption included questions 8, 9, and 10. To evaluate the ability of these questions to predict fruit and vegetable consumption, ANOVA analysis was used to compare a family meal frequency question to questions 8, 9, 10, 9sum, and 10sum. As previously discussed, comparing question 8 to this family meal frequency question did not yield significant results, and this question was therefore discarded. Questions 9 and 10 were both significant, with the strongest significance shown in questions 9sum and 10sum.

Therefore, through the results of the ANOVA test, it was decided not to use question 8 in the final tool. In regards to choosing between questions 9 and 10, the statistics did not clearly point to one over the other. While both questions were determined to be reliable, Question 10 performed better in test-retest reliability, yielding results of greater significance than Question 9. In addition, Question 10 was decided upon because there are times during the day that children eat fruits and vegetables (i.e. school) that the parents would not be the ones offering. Therefore using the phrase of “child eats” rather than “parent offers” may be beneficial.

Based on these findings, a final assessment tool was developed. The SNAP committee requested that the tool be limited to one page and measure frequency, TV viewing, and fruit and vegetable consumption. Questions 1, 3, and 10 were chosen for recommendation to the SNAP committee. These questions collect the desired data on family meal frequency including the number of times a family eats breakfast, lunch, and dinner together. They assess many aspects of family meal quality such as television viewing during meals, whether meals are planned ahead of time, whether parents sit with their children, and mealtime enjoyment.

Modifications of the Cover Page

Focus group responses

The cover page of the assessment tool (see Appendix C) was first presented to a focus group, composed of members of Sample 3. Questions 1-9 (see Appendix D) were asked to this group. During this focus group, paraprofessionals felt as though the tool would be efficient in collecting the desired information, and also gave several ideas of how it could be improved. They first indicated that it was not clear whether the client should complete this page, or the staff member, and therefore suggested that the cover page be clearly marked with the phrase “staff use only.” In addition, they felt as though it might be beneficial to include the “mode of administration” section on both the pre and post tests. Again, these sections should be clearly labeled as “staff use only.” They also indicated that the font was readable, but they would prefer it to be larger if possible.

One point of confusion for the focus group members was they felt it was unclear if the post-test was to be completed the same day as the pretest and the blanks of the pre and post-test should be incorporated into the cover page. They also indicated that the title of Part B “Family Meal Education between pretest and posttest: Check ALL that apply” was confusing in regards to the time frames of asking goals. They suggested to clarify as to when the pretest and posttest would occur, whether it would be the same day as the lesson, or in a follow up appointment.

They also indicated several small changes regarding the wording of the cover page that would improve its efficiency. Paraprofessionals felt if the wording of the cover page was changed to reflect handout distribution status (if handout was given, not given, or an additional family meal education tool was used) the assessment tool would adequately and accurately describe use of the handout. Additionally, in regards to the types of family meal education distributed, they suggested to include an “Other” option for those who did not provide education in one of the ways already listed. Finally, under the “Family Meal Goal-Setting” section, they suggested to change the label of “good places” to something

more along the lines of “location.” They felt as though using the word “good” may be confusing as it may raise the question of what is a “good place” versus a “bad place”.

Open ended interview responses

Interview #1

After the focus group, the suggested changes were made, and Revision 1 of the cover page (see Appendix C) was presented during an interview with a WIC employee, who was a part of Sample 4. Questions 1-11 (see Appendix D) were asked. This staff member had several suggestions in regards to the cover page. She first suggested that it would be beneficial to relocate the phrase “Staff use only” directly under the cover page title to ensure that it would be seen by the person administering the assessment tool. In regards to collecting information about the clients, she thought it would be advantageous to learn the age of each child in the family, as well as the ethnicities of the children and the caregivers.

In regards to the pre and post test pages, she thought that it would be better to put a text box around the staff-administered questions rather than a shaded box due to the quality of the text after copies had been made. She also indicated the need to ask if a different person was completing the post-test, as in her program, it is different caregivers come in at different times, so it would be important to know if the person completing the post-test is the same person who received the family meal education.

In regards to the assessment tool’s use at WIC, she indicated the importance of setting up an alert on client folders to remind staff members to complete the post-test, as it will be administered several months after the pretest. The staff member indicated implementation of tool would require little training among WIC staff, and would likely take less than 30 minutes.

Interview #2

Revision 1 of the cover page (see Appendix C) was also presented during an interview with an FNP employee, who was also a part of Sample 4. Questions 1-11 (see Appendix D) were asked. Her first recommendation was that it would be beneficial to relocate “Staff use only” to a more visible location on the tool. In regards to the font sizes, she found them to be readable, but thought that there might be too much variety in the selection of sizes, and thought that just a few should be used.

With the questions, she thought that it would be appropriate to ask the ethnicity of the participant, but suggested to provide a list of options rather than having an open ended question. In addition, she also felt as though “Section A.” needed a heading, and that perhaps the line that included the pretest and date could be moved to the heading of this section.

In regards to the practical administration of the tool, she indicated that it might be beneficial to have several guidelines regarding when the pretest, education, and post-test should be administered. She expressed her concern with the fact that the family meal lesson is the last lesson in the curriculum and it would therefore be difficult to follow up with the post-test. She indicated that little training would be needed to implement the tool.

Interview #3

After interview #2, the suggested changes were made, and Revision 2 of the cover page (see Appendix C) was presented during an interview with an FNP employee, who was also a part of Sample 4. Questions 1-11 (see Appendix D) were asked. This staff member had several suggestions in regards to the cover page. The first few suggestions regarded data collection in “Section A.” she first of all thought this section was a little cramped and that it would perhaps be beneficial to space the lines out slightly. To aid us in collecting information about ethnicity, she provided us with a list of options that are used by a currently existing FNP survey. When collecting information about age, she

expressed that it may be beneficial to provide a range of ages to select from, rather than a blank space, due to the fact that listing ages may take more room than we provided, especially for children less than one year.

The only other improvement she indicated could be made was in the “Family Meal Education” section. She suggested increasing the amount of space for staff members to complete the “Other” response if the type of education is not listed on the form. She indicated the tool was straight forward and little training would be needed to implement the tool within the FNP program.

Based on these responses, Revision 3, a final assessment tool (see Appendix C) was created to present to the SNAP committee, and was approved in April 2009.

Effectiveness

The effectiveness of the tool to assess television viewing during family meals and fruit and vegetable consumption among families receiving services from WIC, EFNEP and FNP is yet to be determined. The revised tool does adequately collect the desired information from target populations, however further analysis of effectiveness is warranted.

Based on completed data analysis from the pilot testing group and the test-retest reliability group, the assessment tool is expected to accurately and reliably measure television viewing practices during family meals and fruit and vegetable consumption. However, for this tool to be truly reliable it must show progress after successful intervention. Therefore, continued analysis of the revised assessment tool along with the educational handout and/or other resources will verify the effectiveness of the selected questions suggested for SNAP implementation.

Limitations of the study

The research done for this project may be limited due to several factors. First, Samples 1 and 2 were convenience samples. Second, Sample 2 had only 20 parents, which may be too small to adequately support the reliability of each question. Secondly, because Sample 2 was asked to fill out the same questionnaire twice, the collected data may have been more reflective of “typical” dietary behaviors and family routines rather than actual behaviors over the course of that time period. Thirdly, the time period chosen for this survey may have represented very unusual weeks, which would further skew the results. Finally, education level, social status, marital status, age, and many other factors may be underlying factors in the association between family meals and fruit and vegetable consumption in Samples 1 and 2, and the pilot assessment tool does not distinguish those.

Implications for further research

Future research is warranted in regards to the development of evaluation tools that accurately and effectively measure the quality and frequency of family meals. Implementation of the SNAP Family Meal Assessment tool can now be used to determine the relationship between family meals, family meal enjoyment, and fruit and vegetable consumption. Research with the target population groups to compare demographics with mealtime enjoyment and frequency of family meals may be the next step in this area of study.

Summary Statement

Television viewing during family meals may be a contributing factor to overall fruit and vegetable consumption in children and research has indicated that educational interventions may positively affect both of these aspects. Pilot testing of questions regarding television during family meals and fruit and vegetable consumption has led to an assessment tool that can be used to potentially measure these aspects in a way that is conducive to the needs of the target audience. The final assessment tool should undergo further analysis to determine the extent of the accuracy, reliability, and ease of use of this assessment tool.

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Appendix A

SNAP Family Meal Project Audience Descriptions

Expanded Food and Nutrition Education Program (EFNEP)

EFNEP participants are limited resource adults with children typically up to age 12 years. The participants are custodial parents or grandparents. Income eligibility is typically based on one of two criteria. If on a federal program such as WIC, or Supplemental Nutrition Assistance Program they automatically qualify. Or, if they live in a household that meets 125% of the poverty guidelines for income.

Food and Nutrition Program (FNP)

FNP participants are eligible for the Supplemental Nutrition Assistance Program. Most Indiana participants are white and female.

Supplemental Food Program for Women, Infants, and Children (WIC)

A WIC participant is defined as a pregnant woman, postpartum breastfeeding or non-breastfeeding woman, an infant up to one year of age, and children from one to five years of age. All participants must live in Indiana, live in a household that meets 185% poverty guidelines for income, and have a medical/nutritional risk.

Appendix B

Description of Assessment Tool for Pilot Testing

Instructions given to Sample 1:

Family Meal Survey:

Thank you for answering some questions about how your family experiences meals. For the purposes of this survey, your “family” is the group of people who live in your house and share the same household food resources.

Please let us know if any questions or answers are confusing or unclear. Do not guess at any answers. If you don’t know, we want to know that. Most questions ask for the same information in different ways. We want to find out which questions are the best. That way the final version will have only a few questions.

Instructions given to Sample 2:

Family Meal Survey:

Thank you for answering some questions about how your family experiences meals. For the purposes of this survey, your “family” is the group of people who live in your house and share the same household food resources. For questions referring to only one child, answer for the child enrolled in this program (Miller Child Learning Center or Child Development Lab School). Please let us know if any questions or answers are confusing or unclear. (You may write comments in the margins.) Do not guess at any answers. If you don’t know, we want to know that. Many questions ask for the same information in different ways. We want to find out which questions are the best. That way the final survey will have only a few questions.

It should be noted that on the original surveys, the instructions and questions 1 through 3 appeared on page 1, questions 4 through 6 appeared on page 2, question 7 appeared on page 3, and questions 8 through 10 appeared on page 4.

Question 1 was adapted from the ACT survey developed at Purdue University. ²¹

1. In the past week, how many days did most of your family living in your house, or at least one adult eating with your child(ren), do the following? (check only one answer in each row)

	Never	1-2 days	3-4 days	5-6 days	7 days
Eat breakfast together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat lunch together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat dinner together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I don't know

Question 2 was modeled from the Project EAT study used by Neumark-Sztainer et al. ¹¹

2. How often do you eat together as a family, or at least one adult in your household sits and eats with child(ren)? (please check only one answer)

- rarely or never
- 1-2 times/week
- 3-4 times/week
- 5-6 times/week
- once a day
- 2-3 times a day

I don't know

Question 3 was taken from Johnson, et al.'s research with WIC. ²²

3. Below are statements about feeding your child. Check the box in each row that describes how often this statement is true.

	Always	Usually	Not usually	Never
Do you usually watch TV during meals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you enjoy eating meals with your children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you sit with your children when they eat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you plan ahead for family meals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 4 was taken from the Project EAT study.¹¹

4. How strongly do you agree with the following statements about mealtime in your family?

	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
In my family, it is important that the whole family eat at least one meal a day together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In my family, we often watch TV while eating meals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 5 was taken from various WIC nutrition questionnaires. The response options were taken from Ellyn Satter's "Feeding Your Child" questionnaire.²³

5. Below are statements about feeding your child. Circle the letter that tells how often you do what it says.

	Almost always	Often	Some-times	Rarely	Never
I sit down and eat meals with my child.	A	O	S	R	N
My child watches TV while eating.	A	O	S	R	N

Question 6 was adapted from WIC questionnaires.

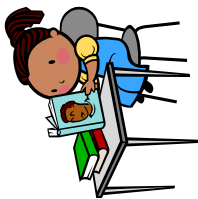
6. How frequently is the television on during meals? (check only one answer)

- _____ all meals
- _____ most meals
- _____ some meals
- _____ rarely or never at meals

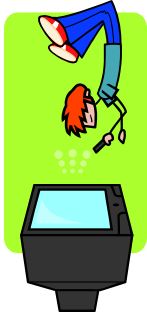
On the next page are pictures showing different ways your child could eat meals. Please fill in the table following the directions.

Question 7 was developed here at Purdue using Virginia's Fit WIC project as a guide.²⁴

There are many ways families can eat meals. Using the following pictures as a guide, choose how many times each picture describes the way your child eats his/her meals in a typical week.



Child eats meal alone



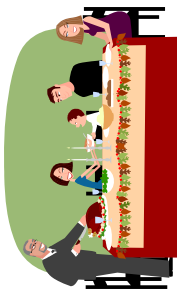
Child eats alone in front of TV



Child eats meal in car



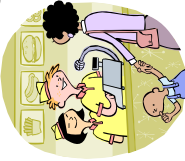
Child eats at daycare/school



You and your child eat together at a table at home





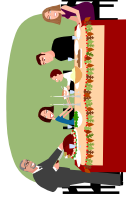




You and your child eat together while watching TV











You and your child eat together in a restaurant

In each space below write a number from 0 to 7 for how many times a week your child eats his/her meals in that way. Across each row the total should add up to 7 breakfasts, 7 lunches, and 7 dinners.

								
Breakfast								
Lunch								
Dinner								

Version of Question 7 included in the pilot test administered to Sample 2

7. Fill in the number of times in a typical week your child eats each meal (breakfast, lunch, and dinner) in the following ways. Totals for each meal should be no more than 7. (An example is provided that might be lunch time.)

	Child eats...	Breakfast	Lunch	Dinner	Example
	by themselves				
	while watching TV alone				1
	in car				1
	at daycare or school				3
	at home with adult(s) at a table				1
	while watching TV with family				
	in a restaurant				1
	non-traditional setting				
	Total	7	7	7	7

Fruit and Vegetable Questions:

For these questions, answer for the child enrolled in this program (Miller Child Learning Center or Child Development Lab School).

Question 8 was based on FNP's assessment for fruit and vegetable intake.

8. Circle the number that matches the one best answer for each statement:

	Rarely or Never	Some of the time	About ½ the time	Most of the time	Almost always
I <u>offer</u> my child 5 or more fruit & vegetable servings a day.	1	2	3	4	5
My child <u>eats</u> 5 or more fruit & vegetable servings a day.	1	2	3	4	5

Questions 9 and 10 were based on WIC's food frequency questionnaire.

9. How many times a day do you offer the following foods to your child:
(Circle the number that best describes how often.)

Fruits (fresh, canned, frozen or dried)	0	1	2	3	4	5 or more
Vegetables (fresh, canned or frozen)	0	1	2	3	4	5 or more
100% fruit or vegetable juice	0	1	2	3	4	5 or more

10. How many times a day does your child eat the following foods:
(Circle the number that best describes how often.)

Fruits (fresh, canned, frozen or dried)	0	1	2	3	4	5 or more
Vegetables (fresh, canned or frozen)	0	1	2	3	4	5 or more
100% fruit or vegetable juice	0	1	2	3	4	5 or more

11. Relationship of person completing survey to child(ren):

- mother father grandparent foster parent
 other:

Thank you for your time.
Please, place your completed questionnaire
in the central collection box.

Appendix C

Development of Assessment Tool Cover Page

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SNAP Family Meal Assessment Tool for EFNEP, FNP, WIC

Complete one assessment per family unit. Complete through A when pretest given, complete B or C when post-test given. Complete the attached pretest before providing education and complete the post-test ... as per program policy... (add to pretest page and post-test page, participant ID # and date, attach all 3 pages together)

Program administering: EFNEP FNP WIC **Participant ID #:** _____

Relationship of person completing survey to child(ren):

mother father grandparent foster parent other:

Mode of administration:

- staff asked questions orally and filled out survey for participant
- participant completed survey without, or with minimal, assistance
- staff explained questions while participant filled in survey

Where was assessment administered?

one-on-one appointment in clinic setting group setting/class in-home visit

A. Family Meal Education provided at time of pretest: Check ALL that apply

- None, to be done at follow-up
- Handout given
- Discussed handout
- Goals set, check below
- Scheduled follow-up

Family meal education was provided as part of:

one-on-one appointment in clinic setting group setting/class in-home visit

Initial goals: Find time Good places Easy/healthy No TV Enjoy time together
(check one or more)

B. Family Meal Education between pretest and post-test: Check ALL that apply

- Handout given
- Discussed handout
- Goals set, check below
- Follow-up on progress: number of follow-ups _____

Family meal education was provided as part of: (check all that apply)

one-on-one appointment in clinic setting group setting/class in-home visit

Initial goals: Find time Good places Easy/healthy No TV Enjoy time together
(check one or more)

Follow-up goals: Find time Good places Easy/healthy No TV Enjoy time together
(check one or more)

Goals met: Find time Good places Easy/healthy No TV Enjoy time together
(check one or more)

C. No Family Meal Education Received

Check if no family meal education received until after post-test (control group).

SNAP Family Meal Assessment Tool for EFNEP, FNP, WIC

Complete one assessment per family unit. Complete section A when pretest is given. Complete section B when family meal education is provided. Complete section C when post-test is given. Complete the attached pretest *before* providing education and complete the post-test on a date *later* than when family meal education is provided, as per program policy. If no additional visits are possible following family meal education, submit with only pretest. Attach all 3 pages together.

COVER INFORMATION PAGE IS FOR STAFF USE ONLY

A. Program administering: EFNEP FNP WIC **Participant ID #:** _____

Relationship of person completing survey to child(ren):

mother father grandparent foster parent other:

Number of children living in household? ____ **Age of each child in family:** _____

Age of person completing survey: ____ **Is this person a high school graduate/GED?** yes no

Pretest: **Date:** _____ (complete prior to family meal education)

B. Family Meal Education:

Check if completed:	Family Meal Education provided:	Date education provided:
	No family meal education provided (control group – measuring effect of no education)	
	“Let’s Talk about Mealtime” Handout given	
	“Let’s Talk about Mealtime” Handout discussed	
	Initial goal(s) set using “Let’s Talk about Mealtime” Handout, check below in family meal goal-setting section	
	Follow-up goal(s) set using “Let’s Talk about Mealtime” Handout, check below in family meal goal-setting section	
	Other family meal resource(s) used, list:	
	Follow-up on progress of previous family meal education and goal setting; check below in family meal goal-setting section when goals are met. (List all dates of follow-ups.)	

Family meal education was provided as part of: (check all that apply)

one-on-one appointment in clinic setting group setting/class in-home visit other:

Family Meal Goal- Setting

Initial goals: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

Follow-up goals: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

Goals met: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

C. Post-test: **Date:** _____ (to be completed on later date from family meal education)

SNAP Family Meal Assessment Tool – Pretest

To be completed by Staff: **Date:** _____ **Participant ID #:** _____

Mode of administration:

- staff asked questions orally and filled out survey for participant
- participant completed survey without, or with minimal, assistance
- staff explained questions while participant filled in survey

Where administered? one-on-one appointment /clinic setting group setting/class in-home visit other

Instructions for answering questions

Survey questions:

One about family meal frequency

One about family meal environment/TV viewing

One about fruit and vegetable intake

SNAP Family Meal Assessment Tool – Post-test

To be completed by Staff: **Date:** _____ **Participant ID #:** _____

Mode of administration:

- staff asked questions orally and filled out survey for participant
- participant completed survey without, or with minimal, assistance
- staff explained questions while participant filled in survey

Where administered? one-on-one appointment /clinic setting group setting/class in-home visit other

Instructions for answering questions

Survey questions:

One about family meal frequency

One about family meal environment/TV viewing

One about fruit and vegetable intake

**SNAP Family Meal Assessment Tool for EFNEP, FNP, WIC
COVER INFORMATION PAGE IS FOR STAFF USE ONLY**

Complete one assessment per family unit. Complete section A when pretest is given. Complete section B when family meal education is provided. Complete section C when post-test is given. Complete the attached pretest *before* providing education and complete the post-test on a date *later* than when family meal education is provided, as per program policy. If no additional visits are possible following family meal education, submit with only pretest. Attach all 3 pages together.

A. Pretest: **Date:** _____ (complete prior to family meal education)

Program administering: EFNEP FNP WIC **ID #:** _____

Relationship of person completing survey to child(ren):

mother father grandparent foster parent other:

Number of children in each age range: 0-1 yr ≥ 1 – 5 yrs 6-11 yrs ≥ 12 yrs

Age of person completing survey: ____ **Is this person a high school graduate/GED?** yes no

Ethnicity of person completing survey: American Indian/Alaskan Native Asian

Black/African American Hispanic Native Hawaiian/Pacific Islander White

Other, please describe:

B. Family Meal Education:

Check if completed:	Family Meal Education provided:	Date education provided:
	No family meal education provided (control group - measuring effect of no education)	
	“Let’s Talk about Mealtime” Handout given	
	“Let’s Talk about Mealtime” Handout discussed	
	Initial goal(s) set using “Let’s Talk about Mealtime” Handout, check below in family meal goal-setting section	
	Follow-up goal(s) set using “Let’s Talk about Mealtime” Handout, check below in family meal goal-setting section	
	Other family meal resource(s) used, list:*	
	Follow-up on progress of previous family meal education and goal setting; check below in family meal goal-setting section when goals are met. (List all dates of follow-ups.)	

*If additional space is needed, please use the back of the page for this or any other answers.

Family meal education was provided as part of: (check all that apply)

one-on-one appointment in clinic setting group setting/class in-home visit other:

Family Meal Goal- Setting

Initial goals: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

Follow-up goals: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

Goals met: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

C. Post-test: **Date:** _____ (to be completed on later date from family meal education)

Relationship of person completing survey to child(ren): same as above, or:

mother father grandparent foster parent other:

SNAP Family Meal Assessment Tool - Pretest

To be completed by Staff: **Date:** _____ **ID #:** _____

Mode of administration:

- staff asked questions orally and filled out survey for participant
- participant completed survey without, or with minimal, assistance
- staff explained questions while participant filled in survey

Where administered? one-on-one appointment /clinic setting group setting/class in-home visit other

Instructions for answering questions

Survey questions:

One about family meal frequency

One about family meal environment/TV viewing

One about fruit and vegetable intake

SNAP Family Meal Assessment Tool - Post-test

To be completed by Staff: **Date:** _____ **ID #:** _____

Mode of administration:

- staff asked questions orally and filled out survey for participant
- participant completed survey without, or with minimal, assistance
- staff explained questions while participant filled in survey

Where administered? one-on-one appointment /clinic setting group setting/class in-home visit other

Instructions for answering questions

Survey questions:

One about family meal frequency

One about family meal environment/TV viewing

One about fruit and vegetable intake

SNAP Family Meal Assessment Tool for EFNEP, FNP, WIC

COVER INFORMATION PAGE IS FOR STAFF USE ONLY

Complete one assessment per family unit. Complete section A when pretest is given. Fill in section B *each time* family meal education is provided. Complete section C when post-test is given. Complete the attached pretest *before* providing education and complete the post-test on a date *later* than when family meal education is provided, as per program policy. If no additional visits are possible following family meal education, submit with only pretest. Attach all 3 pages together.

A. Pretest: **Date:** _____ (complete prior to family meal education)

Program administering: EFNEP FNP WIC **ID #:** _____

Relationship of person completing survey to child(ren):

mother father grandparent foster parent other:

Number of children in each age range: 0-1 yr ≥ 1 – 5 yrs 6-11 yrs ≥ 12 yrs

Age of person completing survey: _____ **Is this person a high school graduate/GED?** yes no

Race/Ethnicity of person completing survey: American Indian/Alaskan Native Asian

Black/African American Hispanic/Latino Native Hawaiian/Pacific Islander White

Other, please describe:

B. Family Meal Education: (fill in each time family meal education is provided)

Check if completed:	Family Meal Education provided:	Date education provided:
	No family meal education provided (control group – measuring effect of no education)	
	“Let’s Talk about Mealtime” Handout given, not discussed	
	“Let’s Talk about Mealtime” Handout given and discussed	
	Initial goal(s) set using “Let’s Talk about Mealtime” Handout, check below in family meal goal-setting section	
	Follow-up goal(s) set using “Let’s Talk about Mealtime” Handout, check below in family meal goal-setting section	
	Other family meal resource(s) used, list:*	
	Follow-up on progress of previous family meal education and goal setting; check below in family meal goal-setting section when goals are met. (List all dates of follow-ups.)	

*If additional space is needed, please use the back of the page for this or any other answers.

Family meal education was provided as part of: (check all that apply)

one-on-one appointment in clinic setting group setting/class in-home visit other:

Family Meal Goal- Setting:

Initial goals: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

Follow-up goals: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

Goals met: Find time Location Easy/healthy No TV Enjoy time together
(check one or more)

C. Post-test: **Date:** _____ (to be completed on later date from family meal education)

Relationship of person completing survey to child(ren): same as above, or:

mother father grandparent foster parent other:

SNAP Family Meal Assessment Tool – Pretest

To be completed by Staff: **Date:** _____ **ID #:** _____

Mode of administration:

staff asked questions orally and filled out survey for participant

participant completed survey without assistance

staff explained questions while participant filled in survey

Where administered? one-on-one appointment /clinic setting group setting/class in-home visit other

Tell us about your family’s meals:

Thank you for answering some questions about how your family experiences meals. For the purposes of this survey, your “family” is the group of people who live in your house and share the same household food resources. For questions about only one child, please answer for the child enrolled in this program.

1. In the past week, how many days did most of your family living in your house, or at least one adult eat with your child(ren), do the following? (check only one answer in each row)

	Never	1- 2 days	3-4 days	5-6 days	7 days
Eat breakfast together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat lunch together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat dinner together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I don’t know

2. Below are questions about feeding your child. Check the box in each row that describes how often your answer to the question is yes.

	Always	Usually	Sometimes	Never
Do you usually watch TV during meals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you enjoy eating meals with your children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you sit with your children when they eat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you plan ahead for family meals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. How many times a day does your child eat (or drink) the following foods:
(Circle the number that best describes how often.)

	0	1	2	3	4	5 or more
Fruits (fresh, canned, frozen or dried)	0	1	2	3	4	5 or more
Vegetables (fresh, canned or frozen)	0	1	2	3	4	5 or more
100% fruit or vegetable juice	0	1	2	3	4	5 or more

Thank you!

SNAP Family Meal Assessment Tool – Post-test

To be completed by Staff: **Date:** _____ **ID #:** _____

Mode of administration:

staff asked questions orally and filled out survey for participant

participant completed survey without assistance

staff explained questions while participant filled in survey

Where administered? one-on-one appointment /clinic setting group setting/class in-home visit other

Tell us about your family’s meals:

Thank you for answering some questions about how your family experiences meals. For the purposes of this survey, your “family” is the group of people who live in your house and share the same household food resources. For questions about only one child, please answer for the child enrolled in this program.

1. In the past week, how many days did most of your family living in your house, or at least one adult eat with your child(ren), do the following? (check only one answer in each row)

	Never	1- 2 days	3-4 days	5-6 days	7 days
Eat breakfast together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat lunch together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat dinner together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I don’t know

2. Below are questions about feeding your child. Check the box in each row that describes how often your answer to the question is yes.

	Always	Usually	Sometimes	Never
Do you usually watch TV during meals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you enjoy eating meals with your children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you sit with your children when they eat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you plan ahead for family meals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. How many times a day does your child eat (or drink) the following foods: (Circle the number that best describes how often.)

Fruits (fresh, canned, frozen or dried)	0	1	2	3	4	5 or more
Vegetables (fresh, canned or frozen)	0	1	2	3	4	5 or more
100% fruit or vegetable juice	0	1	2	3	4	5 or more

Thank you!

Appendix D: Implementation of SNAP focus group questions

Discussion Questions for Focus Group and Interviews:

Think back to the last time you did family meal education. Look at the cover page for the family meal assessment tool and consider how you would administer it with a participant. Imagine that you are completing it with someone as you answer the following questions:

1. Are the overall instructions clear? How do you interpret the use of this assessment tool and specifically the cover page? The intent of the cover page is to be completed by the staff only. How can we communicate this, such that it is not given to participants to complete?
2. Is it readable? Is the font size large enough? Do the questions flow in a logical order?
3. Is anything confusing or unclear? Is it clear what information is being asked for? Do you have any suggested changes in wording?
4. Is it clear how to fill it out? Do you have any suggestions for simplifying responses or laying out questions and answers?
5. Does it ask for the information in such a way that the desired information will be obtained? Is there a better way to ask?
6. Describe all the ways you provide family meal education. Does the assessment tool adequately allow you to describe how family meal education is provided in a concise and accurate way?
7. Describe how you use the SNAP family meal educational handout. Does the assessment tool adequately allow you to describe your use of the handout in a concise and accurate way?
8. Do the options for goal setting clearly describe the choices in the handout?
9. Could this be completed realistically with participants? If not, how could it be changed to be done practically? Consider both the “pretest” data collection time and the “post-test” data collection time: how can we make this work best?
10. The honors project reviewers recommended that it would be advantageous to collect a few more pieces of information including age/ethnicity of adult as well as children represented in the family and possibly educational level. We added questions to collect this information to this version; do you have any comments about how this was done?
11. What kinds of directions/training are needed to use this tool?