

**CAREGIVERS' ATTITUDES TOWARD MILK FAT TYPE AND MILK
CONSUMPTION AMONG WIC PARTICIPANTS: AN EXPLORATORY STUDY**

A Thesis

by

KATRINA JANE SERRANO

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2010

Major Subject: Health Education

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ABSTRACT

Caregivers' Attitudes Toward Milk Fat Type and Milk Consumption Among WIC

Participants: An Exploratory Study. (May 2010)

Katrina Jane Serrano, B.S., University of Illinois at Chicago

Chair of Advisory Committee: Dr. E. Lisako J. McKyer

Factors such as parental/caregiver influences and socioeconomic status have been shown to impact food-related attitudes and behaviors. Consequently, these attitudes and behaviors affect health outcomes. The purpose of this study was to assess, using the Social Cognitive Theory (SCT), attitudes toward milk fat type and milk consumption among Texas WIC participants. Few studies, using this theoretical framework, have examined milk intake specifically among this population. Four hypotheses were proposed according to the theoretical model. The inclusionary criteria used for this study yielded a subset sample of 2,115; all cases included were Texas WIC participants.

The results of this study show that caregivers' attitudes toward drinking and offering milk fat type are related. Caregivers' attitudes toward drinking milk fat type and the type of milk they drank were proven to be statistically significant. Similarly, caregivers' attitudes toward offering milk fat type and the milk fat type their children drank were proven to be significant. Caregivers' milk intakes were positively associated with children's milk intakes.

It is evident that parental/caregiver modeling influences children's dietary habits. Parental/caregiver behaviors are important influences to consider when implementing nutrition education programs or intervention efforts, especially for participants of WIC. Improving caregivers' attitudes toward low-fat or fat-free milk intake can also contribute to healthier food-related choices.

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Thanks also go to faculty and friends who helped me edit this paper and to those who believed I would finish this on time! Thanks to my family for their love and support, and a special thanks to my fiancé (soon to be husband) for his love, patience and editorial skills. Lastly, I dedicate this to my niece, Madison Joy, who drinks milk according to the recommendations despite minor complaints.

TABLE OF CONTENTS

	Page
ABSTRACT	iii
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	viii
LIST OF TABLES	ix
INTRODUCTION.....	1
Childhood Obesity/Overweight.....	1
Milk Consumption and Recommendations	2
Women, Infants, and Children (WIC)	3
Theoretical Framework	4
Study Model	5
Hypotheses	6
METHODS.....	8
Study Protocol	8
Inclusionary/Exclusionary Criteria for Present Study	9
Sample Population.....	9
Measures and Statistical Analysis	11
RESULTS.....	13
Results of H ₀ 1.....	13
Results of H ₀ 2.....	14
Results of H ₀ 3.....	17
Results of H ₀ 4.....	19
DISCUSSION AND CONCLUSION	21
Limitations and Recommendations	23
Conclusion and Implications for Practice	24

	Page
REFERENCES.....	26
APPENDIX A	32
VITA	43

LIST OF FIGURES

FIGURE	Page
1 Study Model Adapted from Fisher, Mitchell, Smiciklas-Wright, and Birch	6

LIST OF TABLES

TABLE	Page
1 Descriptive Characteristics of Participants and Their Children	10
2 Descriptive Characteristics of Participants	10
3 Description of Attitudes and Consumption Variables.....	12
4 Crosstabulation of Caregivers' Attitudes Toward Drinking 1% Milk and Offering Child 1% Milk	13
5 Crosstabulation of Caregivers' Attitudes Toward Drinking Skim Milk and Offering Child Skim Milk	14
6 Crosstabulation of Caregivers' Attitudes Toward Drinking 1% Milk and Their Own Milk Fat Type Intake.....	15
7 Crosstabulation of Caregivers' Attitudes Toward Drinking Skim Milk and Their Own Milk Fat Type Intake.....	15
8 Crosstabulation and Standardized Residuals of Caregivers' Attitudes Toward Drinking 1% Milk and Their Own Milk Fat Type Intake.....	16
9 Crosstabulation and Standardized Residuals of Caregivers' Attitudes Toward Drinking Skim Milk and Their Own Milk Fat Type Intake	16
10 Crosstabulation of Caregivers' Attitudes Toward Offering Child 1% Milk and Their Child's Milk Fat Type Intake.....	17
11 Crosstabulation of Caregivers' Attitudes Toward Offering Child Skim Milk and Their Child's Milk Fat Type Intake.....	18
12 Crosstabulation and Standardized Residuals of Caregivers' Attitudes Toward Offering Child 1% Milk and Their Child's Milk Fat Type Intake	18
13 Crosstabulation and Standardized Residuals of Caregivers' Attitudes Toward Offering Child Skim Milk and Their Child's Milk Fat Type Intake	19

TABLE	Page
14 Crosstabulation and Standardized Residuals of Caregivers' Milk Intakes and Children's Milk Intakes	20

INTRODUCTION

Relevant studies have found that factors such as parental/caregiver influences (Richards & Smith, 2007; O'Connor et al., 2010) and socioeconomic status (Bere, van Lenthe, Klepp, & Brug, 2008) influence food-related attitudes and behaviors. Moreover, pertinent literature has shown that food-related attitudes and behaviors affect health outcomes such as overweight/obesity (Mann, 2002). Therefore, it is important to examine attitudes toward types of food or beverages and its effect on behavior and/or consumption. Although studies have focused on attitudes and behaviors related to fruit and vegetable consumption, little is known about the parental/caregiver attitudes toward milk and its relevance to milk consumption. The purpose of this study was to assess, using a theoretical framework, attitudes toward milk fat type and milk intake among participants who participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).

Childhood Obesity/Overweight

Childhood obesity is a pressing public health concern. In the U.S., the prevalence of obesity for children (aged 2-5 years) has increased from 5.0% to 12.4% in the last 3 decades (Centers for Disease Control and Prevention, n.d.). A study conducted by Mei, Grummer-Strawn, and Scanlon (2003) found that overweight infants continued to be overweight preschool children. Moreover, according to one study, early obesity in

This thesis follows the style of *Health Education and Behavior*.

children (aged 6 years and younger) is likely to persist during childhood (Quattrin, Liu, Shaw, Shine, & Chiang, 2005). Also, the risk of obesity in adulthood can increase as overweight children mature (Whitaker, Wright, Pepe, Seidel, & Dietz, 1997).

Many factors influence childhood obesity. According to Keller and Stevens (1996), one influential factor is family. Parents/caregivers influence the health behaviors of children in many ways: by setting and establishing the food and lifestyle decision-making norms (Duffy, 1988). Food-related habits and partiality for high fat (energy-dense) foods can develop during childhood (Birch, 1992; Shea et al., 1993). Thus, parental/caregiver influences can play an important role in the development of these habits (Birch & Davison, 2001; Fisher, Mitchell, Smiciklas-Wright, Mannino, & Birch, 2004). One important factor to consider in childhood obesity is excess energy intake (i.e., high fat and energy-dense foods and drinks) and the parental/caregiver influences involved.

Milk Consumption and Recommendations

Milk provides over fifty percent of the total calcium intake for infants and toddlers. It offers several health benefits, such as: bone development in childhood and decreased osteoporosis in later life (Heaney, 2000; Peacock, 1991). However, historically, a large proportion of the U.S. population does not consume the recommended amount (Fleming & Heimbach, 1994). Milk can “do a body good”; however, high milk fat content, such as whole milk, can do just the opposite.

Studies have identified whole milk as the key dietary source of both total and saturated fat among young children (Basch, Shea, & Zybert, 1992; Thompson & Dennison, 1994). Reducing dietary total fat and saturated fat can bring several health benefits, including: a decreased risk of cardiovascular disease and lower energy intake. Interventions that reduce total dietary fat and saturated fat have been successful with some infants and children, and studies show low-fat diets do not interfere with normal growth and development when carefully supervised (Niinikoski et al., 1997; Obarzanek et al., 1997). Other studies conclude milk fat is the easiest and most important food to target when lowering total fat and saturated fat intake (Basch et al., 1992; Lagström et al., 1999; Niinikoski et al., 1997; Peterson & Sigman-Grant, 1997; Sigman-Grant, Zimmerman, & Kris-Etherton, 1993; Spark, Pfau, Nicklas, & Williams, 1998; Thompson & Dennison, 1994; Wechsler, Basch, Zybert, & Shea, 1998).

As children mature, it is recommended that they make more frequent choices of low-fat dairy products, which include low-fat and fat-free milk; this is also true for adults (National Cholesterol Education Program, 1991). Furthermore, current guidelines suggest children 2 years of age or older consume 2 cups of milk daily, and for adults, 3 cups of milk is recommended.

Women, Infants, and Children (WIC)

Excess energy (high fat food) intakes have been shown to contribute to overweight/obesity rates and other health complications (Mann, 2002). According to Dennison, Rockwell, and Baker (1998), children in low-income families have elevated

intakes of dietary total fat, saturated fat, and cholesterol. Low-fat or fat-free milk intake, especially with children, has also been low within this population group (Dennison, Erb, & Jenkins, 2001; Dennison, Rockwell, & Nichols, 2001).

The creation of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) arose from recommendations made by Congress to improve the health of pregnant women and children who were socioeconomically disadvantaged and at nutritional risk (Kennedy & Cooney, 2001). In 1972, WIC was implemented as a 2-year pilot project by the United States Department of Agriculture. Studies on WIC have shown the program is successful in improving the health of infants and children, while simultaneously reducing government costs (Kennedy & Cooney, 2001).

The Texas WIC serves approximately 260,000 women, 250,000 infants (1 to <12 months old), and 540,000 children (1 to <5 years old) of low economic status who are at nutritional risk (Texas Department of State Health Services, n.d.-b). The program offers vouchers for foods and beverages that have been approved by WIC. The Texas WIC program recommends the consumption of low-fat or fat-free milk for individuals over the age of 2. WIC participants, however, may choose to purchase whole milk, 2% milk, 1% milk, or skim milk (Texas Department of State Health Services, n.d.-a).

Theoretical Framework

Caregiver influences can significantly impact children's dietary habits, and food-related behaviors can develop during childhood (Birch, 1992; Shea et al., 1993). And according to a construct of the Social Cognitive Theory (SCT) (Bandura, 1986),

observational learning (from the child's perspective) and modeling (from the caregiver's perspective), children can adopt behaviors, such as eating and drinking behaviors and/or food and drink preferences, from their caregivers.

The SCT was used as the framework to guide the query of this study. The SCT asserts that human behavior is the result of interactions between personal, behavioral and environmental influences (Bandura, 1986). The SCT's construct of observational learning through caregiver modeling was of special focus for this study. Bandura (1986) claims there are four processes involved in observational learning: 1) attention, 2) retention, 3) production, and 4) motivation. Attention is dependent on the type of behavior one is able to observe. Retention is defined as one's intellectual ability or the ability to store information. The actual performed behavior is called production; and continuation of the behavior is then determined by the motivation (i.e., the costs and benefits associated with performing that behavior).

Access to different role models, such as family or peers, determines what behaviors an individual is able to observe. Therefore, for this study, caregiver modeling was more relevant to look into. To the author's knowledge, no studies using the SCT, have examined milk intake specifically.

Study Model

The hypothesized model below, Figure 1, illustrates the SCT's construct of observational learning and caregiver modeling. It is proposed that: caregivers' attitudes toward drinking low/fat-free milk will impact their attitudes toward giving their child

low/fat-free milk; caregivers' attitudes will influence their own milk intake and their child's milk intake; and observed behavior (milk intake) of the caregiver will be related to the milk intake of the child.

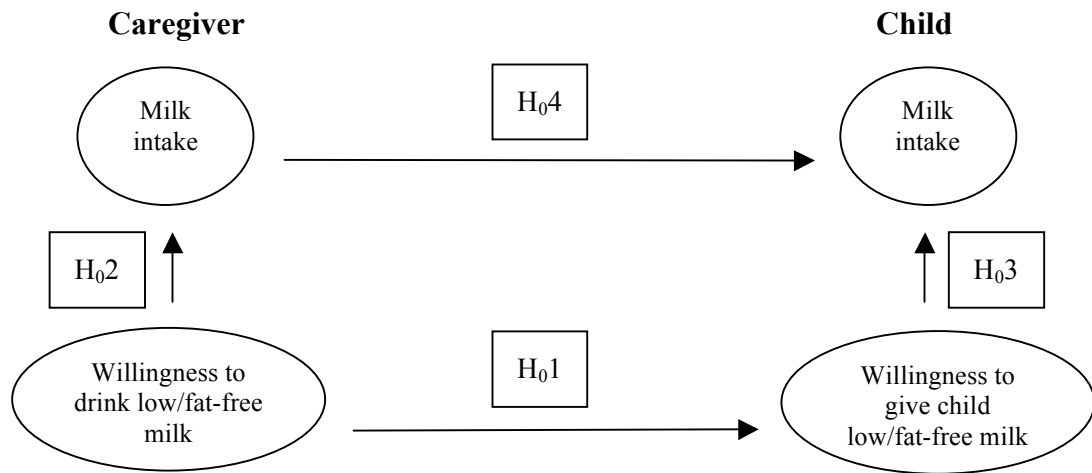


Figure 1. Study Model Adapted from Fisher, Mitchell, Smiciklas-Wright, and Birch (2001). This model represents the association between caregiver and child interaction, according to a construct of the SCT.

Hypotheses

1. H₀₁: There is no association between caregivers' attitudes toward milk fat type consumption (i.e., willingness to drink) and attitudes toward milk fat type offerings (i.e., willingness to give) for their child.
 H₁₁: Caregivers' attitudes toward milk fat type consumption (i.e., willingness to drink) are associated with attitudes toward milk fat type offerings (i.e., willingness to give) for their child.

2. H₀2: There is no association between caregivers' attitudes toward milk fat type consumption (i.e., willingness to drink) and their own milk fat type consumption.

H₁2: Caregivers' attitudes toward milk fat type consumption (i.e., willingness to drink) are associated with their milk fat type consumption.

3. H₀3: There is no association between caregivers' attitudes toward milk fat type offerings (i.e., willingness to give) and their child's milk fat type consumption.

H₁3: Caregivers' attitudes toward milk fat type offerings (i.e., willingness to give) are associated with their child's milk fat type consumption.

4. H₀4: There is no relationship between caregivers' milk intake and children's milk intake patterns.

H₁4: Children's milk intakes are related to caregivers' milk intakes.

METHODS

Study Protocol

For this study, existing (secondary) data were used. The instrument used for data collection – the Texas Food and Nutrition (TEXFAN) questionnaire – was developed by the Institute for Obesity Research and Program Evaluation at Texas A&M University and the Texas Department of State Health Services Women, Infants, and Children (WIC). Based on the research objectives of Texas WIC, the questionnaire was created to obtain participant data prior to the implementation of the new WIC food package. Pilot studies testing the questionnaire occurred multiple times at two different WIC clinics prior to the distribution of the statewide questionnaire (Vaughan, 2010). Results from the pilot studies helped refine the questionnaire to achieve optimal results (Vaughan, 2010).

The TEXFAN questionnaire was administered to participants from 73 local WIC agencies in Texas between November 2008 and April 2009. Staff at each local agency was instructed to distribute questionnaires to eligible WIC participants. All adults, with children under the age of 5, and women who were pregnant or postpartum were eligible. The questionnaire was self-administered and was available in both Spanish and English. The original data set yielded a large sample (N=6,884). A subset was selected for the current study.

Inclusionary/Exclusionary Criteria for Present Study

Not all of the available data were used for this study. Cases included for this study met the following criteria:

- Cases with sections completed for both caregivers, and for children (ages 1 but <5 years old)
- Cases with reported caregivers' ages at least 18 years old
- Cases with reported children's ages at least 2 years or older, but less than 5 years old

Both English and Spanish questionnaires that met the above criteria were used for analyses. The infant portion of the questionnaire was not included for the purpose of this study. All questions not related to milk fat type attitudes and intakes were excluded.

Sample Population

The original data set included 6,884 cases. Cases meeting the first inclusionary criteria (i.e., including only completed cases with data on children) yielded 3,798 cases. After selecting for caregivers 18 years and older, and children 2 years old but <5, (i.e., the second and third inclusionary criteria) the final sample size was 2,115. The demographic questions were assessed; and the tables below (Tables 1 and 2) summarize the final sample included in the present study's analyses.

Table 1. Descriptive Characteristics of Participants and Their Children

Variable	<i>N</i>	Percent
Participant's age (in years)		
18 to 23	560	26.5
24 to 29	738	34.9
30 or older	817	38.6
Participant's sex		
Male	24	1.2
Female	1956	98.8
Child's sex		
Male	1069	52.4
Female	973	47.6
Child's age (in years)		
2	848	40.1
3	740	35.0
4	527	24.9

Table 2. Descriptive Characteristics of Participants

Variable	<i>N</i>	Percent
Language spoken at home		
English	845	41.4
Spanish and English	579	28.3
Spanish	619	30.3
Education level		
1 st – 6 th grade	153	7.6
7 th – 12 th grade	705	34.9
High school graduate or GED	634	31.4
Some college and above	530	26.2
Race		
White, non-Hispanic	351	17.7
White, Hispanic	1162	58.6
Black, non-Hispanic	143	7.2
Black, Hispanic	31	1.6
Native American, non-Hispanic	6	0.3
Native American, Hispanic	77	3.9
Pacific Islander, non-Hispanic	3	0.2
Pacific Islander, Hispanic	0	0.0
Asian, non-Hispanic	11	0.6
Asian, Hispanic	15	0.8
Do not want to answer	36	1.8
Other	97	4.9
Multi-racial	52	2.6

Note. For the variable Race, participants were allowed to choose more than one answer; *N* represents the number of participants who selected that particular race and percent indicates the percentage of participants with that selected race.

In this subset sample, over half of the participants who responded to the demographic questions were over the age of 24, had a high school degree or at least some college, and identified themselves as White-Hispanics.

Measures and Statistical Analysis

The TEFAN questionnaire consisted of items designed to measure: adult and child food and beverage consumption; infant breastfeeding and formula feeding; infant and child feeding practices; and the demographics of the participants. The questionnaire contained 122 questions. A copy of this instrument is available in Appendix A. For this study, analyses included only the questions pertaining to attitudes toward milk fat type and milk intake for both caregiver and children. These variables, questions, and scales are included in Table 3.

The Statistical Package for the Social Sciences software (SPSS version 16.0) was used to analyze the data. For all hypotheses, Chi-Squared tests ($\chi^2 = \sum (\text{Observed frequency} - \text{Expected frequency})^2 / \text{Expected frequency}$) were used to determine potential relationships.

Table 3. Description of Attitudes and Consumption Variables

Variable		Indicator	Measurement Scale	
Attitudes	Consumption			
Attitudes toward low-fat milk (parent)		Q38. "I am willing to drink 1% milk."	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	Recoded: 1 = Not willing to drink 1% milk 2 = Neutral 3 = Willing to drink 1% milk
		Q39. "I am willing to drink skim milk."	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	Recoded: 1 = Not willing to drink skim milk 2 = Neutral 3 = Willing to drink skim milk
Attitudes toward low-fat milk (child)		Q121. "I am willing to give my child two years or older 1% milk."	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	Recoded: 1 = Not willing to give child 1% milk 2 = Neutral 3 = Willing to give child 1% milk
		Q122. "I am willing to give my child two years or older skim milk."	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	Recoded: 1 = Not willing to give child skim milk 2 = Neutral 3 = Willing to give child skim milk
	Amount of milk intake (parent)	Q27. "How many cups of milk do you drink in a day?"	1 = Less than 1 cup 2 = 1 cup 3 = 2 cups 4 = 3 cups 5 = 4 or more cups	
	Milk fat type intake (parent)	Q29. "What kind of cow's milk do you usually drink?"	1 = Whole milk 2 = 2% milk 3 = 1% milk 4 = ½ % milk 5 = Skim milk	
	Amount of milk intake (child)	Q95. "How many cups of milk does your child usually drink in a day?"	1 = Less than 1 cup 2 = 1 cup 3 = 2 cups 4 = 3 cups 5 = 4 or more cups	
	Milk fat type intake (child)	Q97. "What kind of cow's milk does your child usually drink?"	1 = Whole milk 2 = 2% milk 3 = 1% milk 4 = ½ % milk 5 = Skim milk	

RESULTS

Results of H_01

The first null hypothesis tested the association between caregiver' attitudes toward milk fat type consumption and their attitudes toward milk fat type offerings (i.e., willingness to give) to their child, as shown in Tables 4 and 5. The test results rejected the null hypothesis.

Table 4. Crosstabulation of Caregivers' Attitudes Toward Drinking 1% Milk and Offering Child 1% Milk

Caregivers' Attitudes Toward Drinking	Caregivers' Attitudes Toward Offering			χ^2
	Not willing to give child 1% milk	Neutral	Willing to give child 1% milk	
Not willing to drink 1% milk	486	116	119	982.41*
Neutral	65	226	115	
Willing to drink 1% milk	100	126	653	
Totals	651	468	887	

*Pearson Chi-Square = $p < 0.001$.

Table 5. Crosstabulation of Caregivers' Attitudes Toward Drinking Skim Milk and Offering Child Skim Milk

Caregivers' Attitudes Toward Drinking	Caregivers' Attitudes Toward Offering			χ^2
	Not willing to give child skim milk	Neutral	Willing to give child skim milk	
Not willing to drink skim milk	788	156	99	1081.89*
Neutral	78	236	84	
Willing to drink skim milk	97	94	405	
Totals	936	486	588	

*Pearson Chi-Square = $p < 0.001$.

Results show that caregivers who were willing (or not willing) to drink either 1% or skim milk were also willing (or not willing) to offer it, either 1% or skim milk, to their child. The observed number of participants who were willing to drink and give 1% milk (N=653) was higher than for those who were willing to drink and offer skim milk (N=405). For those who were not willing to drink and not willing to offer 1% milk the observed number was 486, while for skim milk the observed number of participants willing to drink and offer was much higher at 788.

Results of H₀₂

The second null hypothesis tested the association between caregivers' attitudes toward milk fat type consumption (i.e., willingness to drink) and their own milk fat type consumption using the Chi-Square test. The test results rejected the null hypothesis. Results from this analysis are shown in Tables 6 and 7. These results reveal a difference

between caregivers' attitudes toward milk fat type and their own milk fat type consumption.

Table 6. Crosstabulation of Caregivers' Attitudes Toward Drinking 1% Milk and Their Own Milk Fat Type Intake

Caregivers' Attitudes Toward Drinking	Their Own Milk Fat Type Intake					χ^2
	Whole milk	2% milk	1% milk	½ % milk	Skim milk	
Not willing to drink 1% milk	474	163	1	0	8	213.77*
Neutral	229	129	2	1	6	
Willing to drink 1% milk	335	379	74	2	37	
Totals	1038	671	77	3	51	

*Pearson Chi-Square = $p < 0.001$.

Table 7. Crosstabulation of Caregivers' Attitudes Toward Drinking Skim Milk and Their Own Milk Fat Type Intake

Caregivers' Attitudes Toward Drinking	Their Own Milk Fat Type Intake					χ^2
	Whole milk	2% milk	1% milk	½ % milk	Skim milk	
Not willing to drink skim milk	648	256	21	1	1	227.65*
Neutral	186	156	19	2	5	
Willing to drink skim milk	204	265	37	0	49	
Totals	1038	677	77	3	55	

*Pearson Chi-Square = $p < 0.001$.

However, more specific analyses were needed for two reasons: 1) to determine which cell(s) contributed to the obtained differences, and 2) due to a violation of the basic assumption needed for a Chi-Square analysis (i.e. minimum cell size $n=5$).

Therefore, residuals and standardized residuals were examined. Tables 8 and 9 summarize these results.

Table 8. Crosstabulation and Standardized Residuals of Caregivers' Attitudes Toward Drinking 1% Milk and Their Own Milk Fat Type Intake

Caregivers' Attitudes Toward Drinking	Their Own Milk Fat Type Intake					χ^2
	Whole milk	2% milk	1% milk	½ % milk	Skim milk	
Not willing to drink 1% milk	474 (5.7) ^a	163 (-4.7)	1 (-5.0)	0 (-1.0)	8 (-2.3)	213.77*
Neutral	229 (1.5)	129 (-0.4)	2 (-3.4)	1 (0.5)	6 (-1.3)	
Willing to drink 1% milk	335 (-6.1)	379 (4.5)	74 (6.7)	2 (0.6)	37 (2.9)	
Totals	1038	671	77	3	51	

*Pearson Chi-Square = $p < 0.001$. ^a Number and standardized residual of caregiver's attitude toward milk fat type compared with milk fat type intake.

Table 9. Crosstabulation and Standardized Residuals of Caregivers' Attitudes Toward Drinking Skim Milk and Their Own Milk Fat Type Intake

Caregivers' Attitude Toward Drinking	Their Own Milk Fat Type Intake					χ^2
	Whole milk	2% milk	1% milk	½ % milk	Skim milk	
Not willing to drink skim milk	648 (5.6) ^a	256 (-4.5)	21 (-2.8)	1 (-0.4)	1 (-5.1)	227.65*
Neutral	186 (-1.4)	156 (1.8)	19 (0.9)	2 (1.8)	5 (-1.8)	
Willing to drink skim milk	204 (-6.1)	265 (4.3)	37 (2.9)	0 (-0.9)	49 (8.0)	
Totals	1038	677	77	3	55	

*Pearson Chi-Square = $p < 0.001$. ^a Number and standardized residual of caregiver's attitude toward milk fat type compared with milk fat type intake.

For 1% milk, the largest difference that contributed to the significance was observed in the group who reported willing to drink 1% milk and drank 1% milk.

Similarly, for caregivers' attitudes toward skim milk and milk fat type consumption, the biggest difference was found in the group that was willing to drink skim milk and drank skim milk. However, the observed totals were highest for participants who consumed whole milk regardless of caregivers' attitudes.

Results of H₀₃

The third null hypothesis tested the association between caregivers' attitudes toward milk fat type offerings and their child's milk fat type consumption, as shown in Tables 10 and 11. The test results rejected the null hypothesis.

Table 10. Crosstabulation of Caregivers' Attitudes Toward Offering Child 1% Milk and Their Child's Milk Fat Type Intake

Caregivers' Attitudes Toward Offering	Their Child's Milk Fat Type Intake					χ^2
	Whole milk	2% milk	1% milk	½ % milk	Skim milk	
Not willing to give child 1% milk	474	145	1	0	3	180.46*
Neutral	303	145	0	1	4	
Willing to give child 1% milk	412	358	65	13	11	
Totals	1189	648	66	14	18	

*Pearson Chi-Square = $p < 0.001$

Table 11. Crosstabulation of Caregivers' Attitudes Toward Offering Child Skim Milk and Their Child's Milk Fat Type Intake

Caregivers' Attitudes Toward Offering	Their Child's Milk Fat Type Intake					χ^2
	Whole milk	2% milk	1% milk	½ % milk	Skim milk	
Not willing to give child skim milk	670	229	15	5	1	161.49*
Neutral	291	159	15	2	1	
Willing to give child skim milk	241	267	33	8	17	
Totals	1202	655	63	15	19	

*Pearson Chi-Square = $p < 0.001$

The results show a difference, although the group that contributed to the difference is unknown. Because certain cells violated the assumption of the Chi-Square test (i.e., minimum cell size $n=5$), further analyses were performed. In order to assess the biggest contributor to the Chi-Square difference, standardized residuals were examined (Tables 12 and 13).

Table 12. Crosstabulation and Standardized Residuals of Caregivers' Attitudes Toward Offering Child 1% Milk and Their Child's Milk Fat Type Intake

Caregivers' Attitudes Toward Offering	Their Child's Milk Fat Type Intake					χ^2
	Whole milk	2% milk	1% milk	½ % milk	Skim milk	
Not willing to give child 1% milk	474 (4.7) ^a	145 (-4.4)	1 (-4.4)	0 (-2.1)	3 (-1.2)	180.46*
Neutral	303 (1.5)	145 (-0.5)	0 (-3.9)	1 (-1.3)	4 (-0.1)	
Willing to give child 1% milk	412 (-5.0)	358 (4.1)	65 (6.6)	13 (2.7)	11 (1.1)	
Totals	1189	648	66	14	18	

*Pearson Chi-Square = $p < 0.001$. ^a Number and standardized residual of caregiver's attitude toward milk fat type offering compared with child's milk fat type intake.

Table 13. Crosstabulation and Standardized Residuals of Caregivers' Attitudes Toward Offering Child Skim Milk and Their Child's Milk Fat Type Intake

Caregivers' Attitudes Toward Offering	Their Child's Milk Fat Type Intake					χ^2
	Whole milk	2% milk	1% milk	½ % milk	Skim milk	
Not willing to give child skim milk	670 (4.4) ^a	229 (-4.5)	15 (-2.7)	5 (-0.8)	1 (-2.7)	161.49*
Neutral	291 (0.2)	159 (0.2)	15 (0.0)	2 (-0.8)	1 (-1.7)	
Willing to give child skim milk	241 (-5.7)	267 (5.6)	33 (3.5)	8 (1.8)	17 (4.8)	
Totals	1202	655	63	15	19	

*Pearson Chi-Square = $p < 0.001$. ^a Number and standardized residual of caregiver's attitude toward milk fat type offering compared with child's milk fat type intake.

For 1% milk, the largest difference was observed within the group of caregivers who were willing to give their child 1% milk and their child's consumption of 1% milk. For skim milk, the largest difference was in the group of caregivers who were willing to give their child skim milk and their child's intake of whole milk. The observed totals were highest for children who consumed whole milk regardless of caregivers' attitudes.

Results of H₀₄

The fourth null hypothesis tested the relationship between caregivers' milk intake and children's milk intake patterns. The test results rejected the null hypothesis. However, due to the violation of the Chi-square analysis (several cells fell below the minimum requirement), standardized residuals and a Spearman's correlation test were performed. Table 14 summarizes these results. The group with the biggest difference that contributed to the significance was between caregivers and children who drank 4 or

more cups of milk. Furthermore, the Spearman correlation test was significant and resulted in a positive correlation.

Table 14. Crosstabulation and Standardized Residuals of Caregivers' Milk Intakes and Children's Milk Intakes

Caregivers' Milk Intakes	Children's Milk Intakes					χ^2	Spearman Correlation
	Less than 1 cup	1 cup	2 cups	3 cups	4 or more cups		
Less than 1 cup	6 (1.7) ^a	36 (2.3)	114 (0.8)	91 (-1.3)	34 (-1.5)	245.06*	0.27**
1 cup	10 (1.1)	89 (4.1)	283 (2.2)	215 (-1.8)	62 (-4.0)		
2 cups	4 (-1.0)	38 (-2.0)	261 (2.4)	215 (-0.4)	81 (-1.3)		
3 cups	0 (-1.8)	7 (-3.7)	62 (-4.7)	153 (4.2)	74 (4.1)		
4 or more cups	1 (-0.1)	0 (-3.0)	10 (-4.7)	44 (0.8)	51 (8.5)		
Totals	21	170	730	718	53		

*Pearson Chi-Square = $p < 0.001$. **Spearman Correlation = $p < 0.001$. ^a Number and standardized residual of parent's milk fat intake compared with child's milk intake.

DISCUSSION AND CONCLUSION

The purpose of this study was to assess caregivers' attitudes toward milk fat type and milk fat type consumption among Texas WIC participants. Consistent with the hypothesized model, the results from this study indicate a relationship between caregivers' attitudes (i.e., their willingness to drink and offer low-fat milk) and milk fat type intake. Moreover, in accordance with the theoretical model proposed earlier, the performed behavior – parent's milk intake – is related to children's milk intake. The results from this study found a positive relationship between caregivers' milk intakes and children's milk intakes.

As anticipated, caregivers' attitudes toward drinking and offering milk fat type were related, that is, their willingness to give their child 1% or skim milk depended on their willingness to drink it themselves. Alternatively, caregivers who were not willing to drink were also not willing to offer 1% or skim milk to their child. Regardless of these results, the observed number of participants who were willing to drink and offer skim milk was much lower than for those who reported willing to drink and offer 1% milk.

Caregivers' attitudes toward drinking milk fat type and the type of milk they actually drank were proven to be statistically significant (both for 1% and skim), implying a strong relationship between the two. Similarly, caregivers' attitudes toward offering 1% milk to their child and the type of milk their child drank were proven to be significant. However, this was not true for caregivers' attitudes toward offering skim

milk and the type of milk their child drank. Despite these relationships, the observed number for participants who consumed whole milk was much higher. One explanation for this result is taste preference, which seems to be a big consideration when choosing milk fat type (Larson, Story, Wall, & Neumark-Sztainer, 2006).

Consumption of low-fat or fat-free milk is recommended for adults and children over the age of 2, but the type of cow's milk most consumed was whole milk both for caregivers and children. As for daily milk intake, the biggest difference was observed for caregivers and children who drank 4 or more cups daily, which is above the recommendation. However, the observed number of participants was highest for parents who consumed 1 cup of milk daily, which is below the recommendation; and for children who consumed 2 cups of milk daily, which is recommended.

Caregivers' milk intakes were positively associated with children's milk intakes. As a caregiver's milk intake increased, their child's milk intake also increased. This is an expected result since another study, using the SCT as a framework, found positive relationships (although weak) between caregiver modeling and fruit, juice, and vegetable consumption (Cullen et al., 2001). Other studies have identified psychosocial factors, such as support from family and friends, as important factors in food-related habits among children and adolescents (Corwin, Sargent, Rheaume, & Saunders, 1999; Molaison, Connell, Stuff, Yadrick, & Bogle, 2005; Young, Fors, & Hayes, 2004).

It is evident that parental/caregiver modeling influences children's dietary habits; this is also supported by existing literature (Birch & Davison, 2001; Cullen et al., 2001; Duffy, 1988; Fisher et al., 2004; Keller & Stevens, 1996). A child observes a particular

behavior, in this case milk consumption, and consequently, performs the same act.

Caregiver behaviors are important influences to consider when implementing nutrition education programs or intervention efforts, especially for participants of WIC.

Promoting healthy lifestyle decision-making norms, such as switching from whole milk to low-fat milk, in the home environment can greatly impact children's diets and future decision-making. Improving caregivers' attitudes toward low-fat or fat-free milk intake can also contribute to healthier food-related choices. Consequently, children who choose to drink low-fat or fat-free milk can decrease their total fat intake.

Limitations and Recommendations

Some of the limitations to this study arise from the TEFAN instrument used for analyses, which was designed to measure the dietary habits of adults and children along with infant breastfeeding, formula feeding, and infant and child feeding practices.

Consequently, milk related questions were limited, and therefore, only a few questions were explored. Future studies should collect information on other caregivers' attitudes and psychosocial factors associated with milk consumption, such as taste preferences.

Moreover, information regarding participants' knowledge of milk, such as milk fat content, should be explored.

Related to the TEFAN instrument, another limitation is the utilization of single items when measuring a variable. In order to calculate reliability, it is recommended that at least two items (i.e., more than one question used to assess one variable) be measured. However, in applied research, the number of questions is often restricted in

order to obtain a higher number of completed questionnaires. Incomplete or blank questionnaires can counteract high reliability rates.

An additional limitation is related to the sample used for this study. Majority of the participants were females, therefore, biasing the sample. The term caregivers may imply both mother and father. Because of the large percentage of females in this study, paternal attitudes and behaviors were not captured. Future studies should take this into consideration, and parental/caregiver (both mother and father) attitudes and behaviors should be assessed.

Final limitations relate to the data collected. Since data were obtained in a survey of participants from several WIC local agencies, the data were subject to reporter bias. Because participants were asked to fill out the questionnaires during their routine WIC visit, participants may have reported socially desirable answers.

Conclusion and Implications for Practice

It is recommended that adults and children over the age of 2 consume low-fat or fat-free milk. Previous studies have identified milk fat type intake as the easiest source to target when lowering total fat intake (Basch et al., 1992; Lagström et al., 1999; Niinikoski et al., 1997; Peterson & Sigman-Grant, 1997; Sigman-Grant et al., 1993; Spark et al., 1998; Thompson & Dennison, 1994; Wechsler et al., 1998). By and large, participants in this study were often not willing to consume or give their child fat-free milk, and were only slightly more willing to give low-fat (1%) milk. And despite attitudes toward low-fat or fat-free milk, the observed number of participants was

highest for those who drank whole milk. This area needs to be addressed and more positive attitudes toward low/fat-free milk need to be promoted through nutrition education.

REFERENCES

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Basch, C. E., Shea, S., & Zybert, P. (1992). Food sources, dietary behavior, and the saturated fat intake of Latino children. *American Journal of Public Health*, 82(6), 810-815.
- Bere, E., van Lenthe, F., Klepp, K., & Brug, J. (2008). Why do parents' education level and income affect the amount of fruits and vegetables adolescents eat? *European Journal of Public Health*, 18(6), 611-615.
- Birch, L. L. (1992). Children's preferences for high-fat foods. *Nutrition Reviews*, 50(9), 249-255.
- Birch, L. L., & Davison, K. K. (2001). Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatric Clinics of North America*, 48(4), 893-907.
- Centers for Disease Control and Prevention. (n.d.). *Trends in childhood obesity: NHANES surveys (1976-1980 and 2003-2006)*. Retrieved December 20, 2009, from <http://www.cdc.gov/obesity/childhood/prevalence.html>
- Corwin, S. J., Sargent, R. G., Rheaume, C. E., & Saunders, R. P. (1999). Dietary behaviors among fourth graders: A social cognitive theory study approach. *American Journal of Health Behavior*, 23(3), 182.

- Cullen, K. W., Baranowski, T., Rittenberry, L., Cosart, C., Hebert, D., & De Moor, C. (2001). Child-reported family and peer influences on fruit, juice and vegetable consumption: Reliability and validity of measures. *Health Education Research, 16*(2), 187-200.
- Dennison, B. A., Erb, T. A., & Jenkins, P. L. (2001). Predictors of dietary milk fat intake by preschool children. *Preventive Medicine, 33*(6), 536-542.
- Dennison, B. A., Rockwell, H. L., & Baker, S. L. (1998). Fruit and vegetable intake in young children. *Journal of the American College of Nutrition, 17*(4), 371-378.
- Dennison, B. A., Rockwell, H. L., & Nichols, M. J. (2001). Use of low-fat milk by children in the New York State WIC varies with parental characteristics. *Journal of the American Dietetic Association, 101*(4), 464-466.
- Duffy, M. E. (1988). Health promotion in the family: Current findings and directives for nursing research. *Journal of Advanced Nursing, 13*(1), 109-117.
- Fisher, J. O., Mitchell, D. C., Smiciklas-Wright, H., & Birch, L. L. (2001). Community and international nutrition: Maternal milk consumption predicts the tradeoff between milk and soft drinks in young girls' diets. *Journal of Nutrition, 131*(2), 246-250.
- Fisher, J. O., Mitchell, D. C., Smiciklas-Wright, H., Mannino, M. L., & Birch, L. L. (2004). Meeting calcium recommendations during middle childhood reflects mother-daughter beverage choices and predicts bone mineral status. *American Journal of Clinical Nutrition, 79*(4), 698-706.

- Fleming, K. H., & Heimbach, J. T. (1994). Consumption of calcium in the U.S.: Food sources and intake levels. *Journal of Nutrition*, 124(Suppl. 8) 1426S-1430S.
- Heaney, R. P. (2000). Calcium, dairy products and osteoporosis. *Journal of the American College of Nutrition*, 19(Suppl. 2), 83S-99S.
- Keller, C., & Stevens, K. R. (1996). Assessment, etiology, and intervention in obesity in children. *The Nurse Practitioner*, 21(9), 31-36, 38, 41-42.
- Kennedy, E., & Cooney, E. (2001). Development of the child nutrition programs in the United States. *Journal of Nutrition*, 131(2), 431S-436S.
- Lagström, H., Seppänen, R., Jokinen, E., Niinikoski, H., Rönnemaa, T., Viikari, J., et al. (1999). Influence of dietary fat on the nutrient intake and growth of children from 1 to 5 y of age: The Special Turku Coronary Risk Factor Intervention Project. *American Journal of Clinical Nutrition*, 69(3), 516-523.
- Larson, N. I., Story, M., Wall, M., & Neumark-Sztainer, D. (2006). Calcium and dairy intakes of adolescents are associated with their home environment, taste preferences, personal health beliefs, and meal patterns. *Journal of the American Dietetic Association*, 106(11), 1816-1824.
- Mann, J. I. (2002). Diet and risk of coronary heart disease and type 2 diabetes. *Lancet*, 360(9335), 783-789.
- Mei, Z., Grummer-Strawn, L. M., & Scanlon, K. S. (2003). Does overweight in infancy persist through the preschool years? An analysis of CDC Pediatric Nutrition Surveillance System data. *Sozial- und Präventivmedizin*, 48(3), 161-167.

Molaison, E. F., Connell, C. L., Stuff, J. E., Yadrick, M. K., & Bogle, M. (2005).

Influences on fruit and vegetable consumption by low-income Black American adolescents. *Journal of Nutrition Education & Behavior*, 37(5), 246-251.

National Cholesterol Education Program. (1991). *Report of the expert panel on blood cholesterol levels in children and adolescent* (NIH Publication No. 91-2732).

Bethesda, MD: US Department of Health and Human Services Public Health Service.

Niinikoski, H., Viikari, J., Rönnemaa, T., Helenius, H., Jokinen, E., Lapinleimu, H., et

al. (1997). Regulation of growth of 7- to 36-month-old children by energy and fat intake in the prospective, randomized STRIP baby trial. *Pediatrics*, 100(5), 810-816.

Obarzanek, E., Hunsberger, S. A., Van Horn, L., Hartmuller, V. V., Barton, B. A.,

Stevens, V. J., et al. (1997). Safety of a fat-reduced diet: The Dietary Intervention Study in Children (DISC). *Pediatrics*, 100(1), 51-59.

O'Connor, T., Hughes, S., Watson, K., Baranowski, T., Nicklas, T., Fisher, J., et al.

(2010). Parenting practices are associated with fruit and vegetable consumption in pre-school children. *Public Health Nutrition*, 13(1), 91-101.

Peacock, M. (1991). Calcium absorption efficiency and calcium requirements in children

and adolescents. *American Journal of Clinical Nutrition*, 54(Suppl. 2), 261S-265S.

Peterson, S., & Sigman-Grant, M. (1997). Impact of adopting lower-fat food choices on

nutrient intake of American children. *Pediatrics*, 100(3).

- Quattrin, T., Liu, E., Shaw, N., Shine, B., & Chiang, E. (2005). Obese children who are referred to the pediatric endocrinologist: Characteristics and outcome. *Pediatrics*, *115*(2), 348-351.
- Richards, R., & Smith, C. (2007). Environmental, parental, and personal influences on food choice, access, and overweight status among homeless children. *Social Science & Medicine*, *65*(8), 1572-1583.
- Shea, S., Basch, C. E., Stein, A. D., Contento, I. R., Irigoyen, M., & Zybert, P. (1993). Is there a relationship between dietary fat and stature or growth in children three to five years of age? *Pediatrics*, *92*(4), 579-586.
- Sigman-Grant, M. J., Zimmerman, S., & Kris-Etherton, P. M. (1993). Dietary approaches for reducing fat intake of preschool-age children. *Pediatrics*, *91*(5), 955-960.
- Spark, A., Pfau, J., Nicklas, T. A., & Williams, C. L. (1998). Reducing fat in preschool meals: Description of the food service intervention component of healthy start. *Journal of Nutrition Education and Behavior*, *30*(3), 170-177.
- Texas Department of State Health Services. (n.d.-a). *Old and new standard food package comparison*. Retrieved January 22, 2010, from www.dshs.state.tx.us/wichd/approved_foods/new_foods.shtm
- Texas Department of State Health Services. (n.d.-b). *WIC participation facts*. Retrieved January 22, 2010, from www.dshs.state.tx.us/wichd/fin/partfact.shtm

- Thompson, F. E., & Dennison, B. A. (1994). Dietary sources of fats and cholesterol in US children aged 2 through 5 years. *American Journal of Public Health, 84*(5), 799-806.
- Vaughan, K. (2010). *Development of a survey to assess the effects of the new WIC food package on participant dietary and child feeding habits*. Unpublished master's thesis, Texas A&M University, College Station, TX.
- Wechsler, H., Basch, C. E., Zybert, P., & Shea, S. (1998). Promoting the selection of low-fat milk in elementary school cafeterias in an inner-city Latino community: Evaluation of an intervention. *American Journal of Public Health, 88*(3), 427-433.
- Whitaker, R. C., Wright, J. A., Pepe, M. S., Seidel, K. D., & Dietz, W. H. (1997). Predicting obesity in young adulthood from childhood and parental obesity. *New England Journal of Medicine, 337*(13), 869-873.
- Young, E. M., Fors, S. W., & Hayes, D. M. (2004). Associations between perceived parent behaviors and middle school student fruit and vegetable consumption. *Journal of Nutrition Education & Behavior, 36*(1), 2-12.

APPENDIX A

FOOD & NUTRITION QUESTIONNAIRE



WIC is changing. We want to be better for you! We need information about your eating habits so we can better meet your needs.

While you are not required to give your WIC FID number to participate in the questionnaire, providing us with your number will allow us to compare your questionnaire results to the services you are receiving.

No one will know who filled out the questionnaire—they will only know what kind of benefits you are getting and how we might do a better job of delivering the services you need.

FOOD & NUTRITION QUESTIONNAIRE

TEXFAN - C9

By filling out this questionnaire, you are giving us permission to use your answers in our study. We are glad you agreed to participate in this questionnaire.

CONSENT

Filling in the circle to the right tells us you agree to allow us to link your WIC administrative records to the questionnaire results.

Yes, I consent to linking my answers to WIC administrative records. I understand my rights, and that includes the assurance that my answers and consent today will not be used to evaluate my WIC benefits or services.

Please provide your WIC FID Number in the space below.

1 2 4 8 6 2 4 8 6 2 4 8 6 2 4 8 6 2 4 8

PLEASE DO NOT WRITE IN THIS AREA

1

REMINDER!

Your answers to these questions will help Texas WIC improve programs and services to better meet our participants' needs. Please remember that your answers to these questions will NEVER be used to determine your WIC eligibility.

The questionnaire is divided into **FOUR** sections (Family, Adult, Infant, and Child). Complete the Family, Adult and the last two sections, if they apply.

**FAMILY**

Everyone fills out this section!

1. How many infants/children in **YOUR** household currently receive WIC benefits?

☐ None Infants & Children ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 or more

2. Other than WIC, who helps **YOUR FAMILY** get food?
(Choose **all** that apply - you can choose more than one)

☐ Food Stamp ☐ Religious Organization, or Church, Synagogue or Mosque ☐ Family ☐ Other (please specify) ☐ Food Bank ☐ None

Please choose the best answer for each of the following statements:

3. I like the food choices offered by WIC.

STRONGLY DISAGREE DISAGREE NEITHER AGREE NOR DISAGREE AGREE STRONGLY AGREE

1 2 3 4 5

4. I like the food amount offered by WIC.

1 2 3 4 5

5. How often in the past month did **YOUR FAMILY** eat tofu, if ever?

☐ Never or Less Than 1 Per Month ☐ 2 Per Week
☐ 1 Per Month ☐ 3-4 Per Week
☐ 2-3 Per Month ☐ 5-6 Per Week
☐ 1 Per Week ☐ 2 or More Per Day

6. What type of beans do you *usually* buy for **YOU** and/or **YOUR FAMILY**?
(Choose **one only**)

☐ Canned
☐ Dried
☐ I do not buy beans

YOU HAVE FINISHED THIS SECTION ABOUT **YOUR FAMILY**. **THANK YOU!**

THE NEXT SECTION IS ABOUT **YOU**.

Please continue to the next section.



ADULT

Everyone fills out this section!

7. Did YOU receive WIC foods in the past 30 days? ☒ Yes ☐ No

How often do YOU do each of the following?

8. Drink 100% juices such as orange, apple, or tomato.
9. Drink artificially sweetened drinks such as diet cola, diet soda, or Crystal Light®.
10. Drink soy milk.
11. Drink sugar sweetened drinks such as Kool-Aid®, soda, cola, sports drinks, or sugar sweetened tea.
12. Eat fruit, **NOT** including juice.
13. Eat vegetables such as salad, carrots, or sweet potatoes, **NOT** including potatoes, French fries, or potato chips.
14. Eat French fries, fried potatoes, or potato chips.
15. Eat potatoes, **NOT** including French fries, fried potatoes, or potato chips.
16. Eat other vegetables, **NOT** including carrots, potatoes, or salad.

NEVER OR LESS THAN ONCE PER WEEK	1 TO 3 TIMES PER WEEK	4 TO 6 TIMES PER WEEK	1 TIME PER DAY	2 TIMES PER DAY	3 TIMES PER DAY	4 OR MORE TIMES PER DAY
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6

THE NEXT QUESTIONS ARE ABOUT WHOLE GRAIN PRODUCTS. How many times do YOU:

17. Eat whole-wheat tortillas.
18. Eat corn tortillas.
19. Eat whole-wheat or whole grain bread.
20. Eat brown rice.
21. Eat oatmeal.

NEVER OR LESS THAN ONCE PER WEEK	1 TO 3 TIMES PER WEEK	4 TO 6 TIMES PER WEEK	1 TIME PER DAY	2 TIMES PER DAY	3 TIMES PER DAY	4 OR MORE TIMES PER DAY
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6

1 2 4 8 6 2 4 8 6 2 4 8 6 2 4 8 6 2 4 8 6 2 4 8

PLEASE DO NOT WRITE IN THIS AREA



3



THE NEXT QUESTIONS ARE ABOUT REFINED GRAIN PRODUCTS. How many times do **YOU**:

22. Eat white bread.

23. Eat white flour tortillas.

24. Eat white rice.

NEVER OR LESS THAN ONCE PER WEEK	1 TO 3 TIMES PER WEEK	4 TO 6 TIMES PER WEEK	1 TIME PER DAY	2 TIMES PER DAY	3 TIMES PER DAY	4 OR MORE TIMES PER DAY
0	1	2	3	4	5	6
0	1	2	3	4	5	6
0	1	2	3	4	5	6

25. During the past year, which fruits did **YOU** usually eat? (Choose all that apply - you can choose more than one)

<input type="checkbox"/> I DO NOT eat fruit.	<input type="checkbox"/> Cherries	<input type="checkbox"/> Mangoes	<input type="checkbox"/> Peaches	<input type="checkbox"/> Tangerines
<input type="checkbox"/> Apples	<input type="checkbox"/> Dates	<input type="checkbox"/> Melons (cantaloupe, honeydew)	<input type="checkbox"/> Pineapple	<input type="checkbox"/> Watermelon
<input type="checkbox"/> Apricots (fresh)	<input type="checkbox"/> Figs	<input type="checkbox"/> Nectarines	<input type="checkbox"/> Plums	<input type="checkbox"/> Other (please specify)
<input type="checkbox"/> Apricots (dried)	<input type="checkbox"/> Grapefruit	<input type="checkbox"/> Oranges	<input type="checkbox"/> Prunes	
<input type="checkbox"/> Bananas	<input type="checkbox"/> Grapes	<input type="checkbox"/> Papayas	<input type="checkbox"/> Raisins	
<input type="checkbox"/> Berries (blueberries, blackberries, raspberries)	<input type="checkbox"/> Kiwis	<input type="checkbox"/> Peaches	<input type="checkbox"/> Rhubarb	
	<input type="checkbox"/> Lemon or lime		<input type="checkbox"/> Strawberries	

26. During the past year, which vegetables did **YOU** usually eat? (Choose all that apply - you can choose more than one)

<input type="checkbox"/> I DO NOT eat vegetables.	<input type="checkbox"/> Cauliflower	<input type="checkbox"/> Mushrooms	<input type="checkbox"/> Summer Squash (yellow, zucchini)
<input type="checkbox"/> Asparagus	<input type="checkbox"/> Chayote	<input type="checkbox"/> Olives	<input type="checkbox"/> Sweet Potatoes
<input type="checkbox"/> Avocado	<input type="checkbox"/> Corn	<input type="checkbox"/> Onions	<input type="checkbox"/> Tomatoes
<input type="checkbox"/> Beets	<input type="checkbox"/> Cucumbers	<input type="checkbox"/> Peppers (Bell, green, yellow, orange or red)	<input type="checkbox"/> Tomatoes
<input type="checkbox"/> Broccoli	<input type="checkbox"/> Eggplant	<input type="checkbox"/> Potatoes	<input type="checkbox"/> Winter Squash (acorn, pumpkin)
<input type="checkbox"/> Brussels Sprouts	<input type="checkbox"/> Greens (collard, mustard, turnip)	<input type="checkbox"/> Spinach	<input type="checkbox"/> Other (please specify)
<input type="checkbox"/> Cabbage	<input type="checkbox"/> Green Beans		
<input type="checkbox"/> Carrots	<input type="checkbox"/> Green Peas		
	<input type="checkbox"/> Lettuce (all varieties)		

27. How many cups of milk do **YOU** drink in a day? (Choose one only) 1 Cup = 8 oz

<input type="checkbox"/> I DO NOT drink milk.	<input type="checkbox"/> 1 Cup	<input type="checkbox"/> 3 Cups
<input type="checkbox"/> Less than 1 Cup	<input type="checkbox"/> 2 Cups	<input type="checkbox"/> 4 or more Cups

28. What kind of milk do **YOU** drink most often? (Choose one only)

<input type="checkbox"/> I DO NOT drink milk.	<input type="checkbox"/> Chocolate or flavored cow's milk	<input type="checkbox"/> Goat's milk	<input type="checkbox"/> Rice milk
<input type="checkbox"/> White cow's milk	<input type="checkbox"/> Soy milk-any flavor	<input type="checkbox"/> Lactaid or lactose-free milk	

29. What kind of cow's milk do **YOU** usually drink? (Choose one only)

<input type="checkbox"/> I DO NOT drink cow's milk.	<input type="checkbox"/> 2% milk	<input type="checkbox"/> 1/2% milk	<input type="checkbox"/> I DO NOT KNOW
<input type="checkbox"/> Whole milk	<input type="checkbox"/> 1% milk	<input type="checkbox"/> Skim milk (fat free)	

Please choose the answer that best indicates **YOUR** response.

30. I buy fresh fruits and vegetables.

31. I prepare meals using fruits and vegetables.

(Choose one only)

32. When I buy vegetables I usually buy:

33. When I buy fruit I usually buy:

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
0	1	2	3	4
0	1	2	3	4

FRESH	CANNED	FROZEN	DRIED
1	2	3	4
1	2	3	4

45. What language is spoken **MOST OFTEN** at home? (Choose **one** only)

☐ English ☐ Spanish and English ☐ Spanish ☐ Other (please specify) _____

46. What is **YOUR** race? (Choose **all** that apply - you can choose more than one)

☐ White, non-Hispanic ☐ Native American, non-Hispanic ☐ Asian, non-Hispanic
☐ White, Hispanic ☐ Native American, Hispanic ☐ Asian, Hispanic
☐ Black, non-Hispanic ☐ Pacific Islander, non-Hispanic ☐ Do NOT want to answer
☐ Black, Hispanic ☐ Pacific Islander, Hispanic ☐ Other (please specify) _____

47. What is the highest level of education **YOU** have completed?

☐ 1st - 6th grade ☐ 10th - 12th grade ☐ GED ☐ Associate's degree or technical College degree
☐ 7th - 9th grade ☐ High School graduate ☐ Some College ☐ Bachelor's degree or higher

48. Are **YOU** employed? ☐ No ☐ Yes - Part Time ☐ Yes - Full Time

49. Are **YOU** currently pregnant? ☐ Yes ☐ No ☐ Does not apply (I am a male) ☐ I do not know

50. Have **YOU** had a baby within the last six months? ☐ Yes ☐ No ☐ Does not apply (I am a male)

51. Are **YOU** currently breastfeeding? ☐ Yes ☐ No ☐ Does not apply (I am a male)

YOU HAVE FINISHED THIS SECTION
ABOUT YOURSELF. **THANK YOU!**

THE NEXT SECTION IS ABOUT YOUR INFANT.



INFANT

Fill out this section if you have an **INFANT**
under 12 months, if **NOT** skip to page 8.

52. Do you have an **INFANT** (less than 12 months) in **YOUR** household who receives WIC foods or formula? ☐ Yes ☐ No

53. If **YES**, did **YOUR INFANT** receive WIC foods in the past 30 days? ☐ Yes ☐ No

54. Are you the **PRIMARY CAREGIVER** for this **INFANT**? ☐ Yes ☐ No

55. Is this **INFANT** a: ☐ Boy ☐ Girl

56. How old is **YOUR INFANT**? ☐ Less Than 1 Month Old ☐ 5 Months Old ☐ 9 to 10 Months Old
☐ 1 to 2 Months Old ☐ 6 Months Old ☐ 11 Months Old
☐ 3 to 4 Months Old ☐ 7 to 8 Months Old

57. Do you feed your **INFANT** anything other than breastmilk, formula or water? ☐ Yes ☐ No



58. Do you feel prepared (jars/containers) baby food to your INFANT? ☒ Yes ☐ No

IF YES to #58 →

59. What kinds of baby food do you feed YOUR INFANT? (Choose all that apply - you can choose more than one)

<input checked="" type="checkbox"/> Fruit	<input checked="" type="checkbox"/> Veggies	<input checked="" type="checkbox"/> Dessert
<input checked="" type="checkbox"/> Vegetables	<input checked="" type="checkbox"/> Grains	<input checked="" type="checkbox"/> Others (please specify) _____
<input checked="" type="checkbox"/> Cereal		

60. How many jars/containers of baby food do you feed YOUR INFANT in an average week? (Answer in grid to the right) →

NO. OF JARS/CONTAINERS

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

IF NO to #58 →

61. If you rarely or never feed baby food or cereal to YOUR INFANT what are the reasons? (Choose all that apply - you can choose more than one)

<input checked="" type="checkbox"/> My <u>INFANT</u> is too young.	<input checked="" type="checkbox"/> I make my own food for my <u>INFANT</u> .
<input checked="" type="checkbox"/> I think it is too expensive.	<input checked="" type="checkbox"/> Family/cultural tradition/practice is to give homemade food.
<input checked="" type="checkbox"/> I don't think it is healthy.	<input checked="" type="checkbox"/> Types I want are NOT available.
<input checked="" type="checkbox"/> I don't think it is fresh.	<input checked="" type="checkbox"/> Other (please specify) _____
<input checked="" type="checkbox"/> My <u>INFANT</u> does NOT like it.	

Please choose the age at which the following foods were first fed to YOUR INFANT:

	MY INFANT DOES NOT EAT THIS	LESS THAN 4 MONTHS OLD	4 TO 5 MONTHS OLD	6 MONTHS OLD	7 TO 8 MONTHS OLD	9 TO 11 MONTHS OLD
62. Cereal	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
63. Vegetables	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
64. Fruit	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
65. Meat	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
66. Desserts	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
67. 100% juice, such as orange, apple or tomato	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
68. Formula	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
69. Regular milk	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
70. Other drinks, such as Kool-Aid®, soda, cola, sports drinks, tea, sugar water, or diet drinks	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5

71. What was the age of YOUR INFANT when you STOPPED breastfeeding?

<input checked="" type="checkbox"/> Never, I DID NOT breastfeed	<input checked="" type="checkbox"/> 2 1 to 2 Months	<input checked="" type="checkbox"/> 3 3 to 4 Months	<input checked="" type="checkbox"/> 4 5 to 6 Months	<input checked="" type="checkbox"/> 5 7 to 8 Months	<input checked="" type="checkbox"/> 6 9 to 10 Months	<input checked="" type="checkbox"/> 7 11 Months	<input checked="" type="checkbox"/> 8 12 Months
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72. Is your INFANT currently breastfed or given breastmilk? ☒ Yes ☐ No

73. Was your INFANT ever breastfed at least one time? ☒ Yes ☐ No ☒ Don't Know / Not Sure

74. Does your INFANT drink formula? ☒ Yes ☐ No

75. How many ounces of formula does YOUR INFANT drink per feeding?

<input checked="" type="checkbox"/> My <u>INFANT</u> does NOT drink formula.	OUNCES PER FEEDING	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5	<input checked="" type="checkbox"/> 6	<input checked="" type="checkbox"/> 7	<input checked="" type="checkbox"/> 8	<input checked="" type="checkbox"/> 9	<input checked="" type="checkbox"/> 10	<input checked="" type="checkbox"/> 11	<input checked="" type="checkbox"/> 12
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1	2	3	4	5	6	7	8	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47
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76. How often does YOUR INFANT drink formula?

1	Never or less than Once Per Week	4	1 time Per Day	8	8 to 9 Times Per Day
2	1 to 2 Times Per Week	5	2 to 3 Times Per Day	9	10 to 11 Times Per Day
3	3 to 4 Times Per Week	6	4 to 5 Times Per Day	10	12 to 13 Times Per Day
4	5 to 6 Times Per Week	7	6 to 7 Times Per Day	11	14 or More Times Per Day

77. When you run out of WIC formula, what do YOU usually do? (Choose one only)

1	Formula DOES NOT usually run out.	3	I add cereal to the formula.	5	I breastfeed my infant.
2	I buy or am given additional formula.	4	I add extra water to the formula.	6	My INFANT DOES NOT drink formula.
3	I add extra milk to the formula.	5	I try to give more breastmilk.		

How often does YOUR INFANT do the following:

	NEVER OR LESS THAN ONCE PER WEEK	1 TO 3 TIMES PER WEEK	4 TO 6 TIMES PER WEEK	1 TIME PER DAY	2 TIMES PER DAY	3 TIMES PER DAY	4 OR MORE TIMES PER DAY
78. Drink milk other than breastmilk or formula.	1	2	3	4	5	6	7
79. Drink soy milk.	1	2	3	4	5	6	7
80. Drink 100% juice, such as apple, orange or tomato.	1	2	3	4	5	6	7
81. Drink other drinks, such as Kool-Aid®, sugar water, soda, cola, sports drinks, or sweet tea.	1	2	3	4	5	6	7
82. Drink water.	1	2	3	4	5	6	7
83. Eat fruits.	1	2	3	4	5	6	7
84. Eat vegetables.	1	2	3	4	5	6	7
85. Eat meat.	1	2	3	4	5	6	7
86. Eat bread, rice, or pasta.	1	2	3	4	5	6	7
87. Eat potatoes. NOT including sweet potatoes.	1	2	3	4	5	6	7
88. Eat cereal.	1	2	3	4	5	6	7
89. Eat desserts.	1	2	3	4	5	6	7

YOU HAVE FINISHED THIS SECTION ABOUT YOUR INFANT. THANK YOU!

THE NEXT SECTION IS ABOUT YOUR CHILD.

CHILD If you have a **CHILD** between the ages one and under five years, please complete the next section; Otherwise, you have FINISHED the questionnaire!

90. Do you have a CHILD over 1 year or older who receives WIC foods? 1 Yes 2 No

91. If YES, did YOUR CHILD receive WIC foods in the past 30 days? 1 Yes 2 No

92. Are you the PRIMARY CAREGIVER for this CHILD? 1 Yes 2 No

93. Is this CHILD a: 1 Boy 2 Girl

94. What is this CHILD'S age? YEARS MONTHS 1 2 3 4 5 6 7 8 9 10 11

PLEASE DO NOT WRITE IN THIS AREA

	7	45	43	41	39	37	35	33	31	29	27	25	23	21	19	17	15	13	11	9	8	7	6	5	4	3	2	1
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95. How many cups of milk does YOUR CHILD usually drink in a day?
(Choose one only) 1 Cup = 8 oz

☐ MY CHILD DOES NOT drink milk ☐ 1 Cup ☐ 3 Cups
☐ Less than 1 Cup ☐ 2 Cups ☐ 4 or more Cups

96. What kind of milk does YOUR CHILD drink most often? (Choose one only)

☐ MY CHILD DOES NOT drink milk ☐ Lactaid or Lactose Free milk ☐ Goat's milk
☐ Cow's milk ☐ Soy milk-any flavor ☐ Rice milk
☐ Chocolate or flavored cow's milk

97. What kind of cow's milk does YOUR CHILD usually drink?

☐ MY CHILD DOES NOT drink cow's milk ☐ 1/2% milk ☐ DO NOT KNOW
☐ Whole milk ☐ Skim milk (fat free)
☐ 2% milk ☐ 1% milk

98. During the past year, which fruits did YOUR CHILD usually eat?
(Choose all that apply - you can choose more than one)

☐ My CHILD DOES NOT eat fruit.

☐ Apples ☐ Apricots (fresh) ☐ Apricots (dried) ☐ Bananas ☐ Berries (blueberries, blackberries, raspberries)

☐ Cherries ☐ Dates ☐ Figs ☐ Grapefruit ☐ Grapes ☐ Kiwis ☐ Lemons or limes

☐ Mangoes ☐ Melons (cantaloupes, honeydew) ☐ Nectarines ☐ Oranges ☐ Papaya ☐ Peaches

☐ Pears ☐ Pineapple ☐ Plums ☐ Prunes ☐ Raisins ☐ Rhubarb ☐ Strawberries

☐ Tangerines ☐ Watermelon ☐ Other (please specify)

99. During the past year, which vegetables did YOUR CHILD usually eat?
(Choose all that apply - you can choose more than one)

☐ My CHILD DOES NOT eat vegetables.

☐ Asparagus ☐ Avocados ☐ Beets ☐ Broccoli ☐ Brussels Sprouts ☐ Cabbage ☐ Carrots

☐ Cauliflower ☐ Chayote ☐ Corn ☐ Cucumbers ☐ Eggplant ☐ Greens (collard, mustard, turnip) ☐ Green Beans ☐ Green Peas ☐ Lettuce (all varieties)

☐ Mushrooms ☐ Okra ☐ Onions ☐ Peppers (Bell, green, yellow, orange or red) ☐ Potatoes ☐ Spinach

☐ Summer Squash (yellow, zucchini) ☐ Sweet Potatoes ☐ Tomatoes ☐ Tomatillos ☐ Winter Squash (acorn, pumpkin) ☐ Other (please specify)

How often does YOUR CHILD do the following?

100. Drink 100% juices such as orange, apple, or tomato.

101. Drink soy milk.

102. Drink artificially sweetened drinks such as diet cola, diet soda or Crystal Light®.

NEVER OR LESS THAN ONCE PER WEEK 1 TO 3 TIMES PER WEEK 4 TO 6 TIMES PER WEEK 1 TIME PER DAY 2 TIMES PER DAY 3 TIMES PER DAY 4 OR MORE TIMES PER DAY

0 1 2 3 4 5 6

0 1 2 3 4 5 6

0 1 2 3 4 5 6

9

(CONTINUED)

103. Drink sugar sweetened drinks such as Kool-Aid®, soda, cola, sports drinks, or sugar sweetened tea.

NEVER OR LESS THAN ONCE PER WEEK 1 TO 3 TIMES PER WEEK 4 TO 6 TIMES PER WEEK 1 TIME PER DAY 2 TIMES PER DAY 3 TIMES PER DAY 4 OR MORE TIMES PER DAY

0 1 2 3 4 5 6

104. Eat fruit, NOT including juice.

0 1 2 3 4 5 6

105. Eat vegetables such as salad, carrots, or sweet potatoes, NOT including potatoes, French fries, or potato chips.

0 1 2 3 4 5 6

106. Eat French fries, fried potatoes, or potato chips.

0 1 2 3 4 5 6

107. Eat potatoes, NOT including French fries, fried potatoes, or potato chips.

0 1 2 3 4 5 6

108. Eat other vegetables, NOT including carrots, potatoes, or salad.

0 1 2 3 4 5 6

THE NEXT QUESTIONS ARE ABOUT WHOLE GRAIN PRODUCTS. How many times does YOUR CHILD:

NEVER OR LESS THAN ONCE PER WEEK 1 TO 3 TIMES PER WEEK 4 TO 6 TIMES PER WEEK 1 TIME PER DAY 2 TIMES PER DAY 3 TIMES PER DAY 4 OR MORE TIMES PER DAY

109. Eat whole-wheat tortillas.

0 1 2 3 4 5 6

110. Eat corn tortillas.

0 1 2 3 4 5 6

111. Eat whole-wheat or whole grain bread.

0 1 2 3 4 5 6

112. Eat brown rice

0 1 2 3 4 5 6

113. Eat oatmeal.

0 1 2 3 4 5 6

THE NEXT QUESTIONS ARE ABOUT REFINED GRAIN PRODUCTS. How many times does YOUR CHILD:

NEVER OR LESS THAN ONCE PER WEEK 1 TO 3 TIMES PER WEEK 4 TO 6 TIMES PER WEEK 1 TIME PER DAY 2 TIMES PER DAY 3 TIMES PER DAY 4 OR MORE TIMES PER DAY

114. Eat white bread.

0 1 2 3 4 5 6

115. Eat white flour tortillas.

0 1 2 3 4 5 6

116. Eat white rice.

0 1 2 3 4 5 6

1 2 3 4 5 6 2 4 8 6 2 4 8 6 2 4 8 6 2 4 8 6 2 4 8

PLEASE DO NOT WRITE IN THIS AREA

Please fill in the circle which best indicates **YOUR** response to the items below:

117. MY CHILD likes to eat fruits and vegetables.

STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE
1	2	3	4	5

118. MY CHILD will eat fruits or vegetables at snack time.

1	2	3	4	5
---	---	---	---	---

119. I can feed MY CHILD fruits, instead of candies, cookies, crackers or chips.

1	2	3	4	5
---	---	---	---	---

120. I am willing to give MY CHILD two years or older 2% milk.

1	2	3	4	5
---	---	---	---	---

121. I am willing to give MY CHILD two years or older 1% milk.

1	2	3	4	5
---	---	---	---	---

122. I am willing to give MY CHILD two years or older skim milk.

1	2	3	4	5
---	---	---	---	---

THANK YOU!

You have finished the Food and Nutrition Questionnaire!

VITA

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