METHODOLOGY – CHILD CARE PROVIDERS

The Texas Department of State Health Services (DSHS) contracted SUMA/Orchard Social Marketing, Inc. (SOSM) to conduct an evaluation of food service practices for children among parents and day care center workers. SOSM subsequently conducted the Day Care Provider Fruit and Vegetable Study with the objectives of determining the opinions and current practices of day care providers with regard to the incorporation of fruits and vegetables into the menus at their facilities. This report includes data from 714 interviews conducted from July 24, 2008 to August 9, 2008.

Of the 714 interviews, 444 were conducted with licensed/registered home care providers and 270 with providers at child care centers. The responses of these participants were each analyzed as part of the whole, as well as individually, to determine whether or not there were any significant differences between these two groups or between their practices.

SOSM's charge was to suggest potential policies to be implemented by the Texas Department of Agriculture with regard to providing healthy snacks to young children.

Additional objectives of the study are listed below.

- Objective #1: explore current meal/snack time practices at day care facilities for children under the age of 10
- Objective #2: determine what types of fruits and vegetables are purchased and served to children as snacks at day care facilities
- Objective #3: learn what types of food preparation/packaging (canned, frozen, fresh, dried) are preferred most often when purchasing fruits and vegetables for the children's snacks, and determine how often whole-grain products are included in meals/snacks at day care facilities
- Objective #4: understand respondents' impressions/opinions of current day care food service practices (including feeding and educating) and family feeding practices
- Objective #5: determine awareness and usage of the Zoby program offered by the Child and Adult Care Food Program (CACFP) and WIC
- Objective #6: learn what partnerships day cares have forged with different organizations, how the current CACFP program has impacted day care centers, and how changes in the programs would impact day care centers
- Objective #7: determine what additional training related to food service and education day care workers would like to receive

Data Collection
SOSM conducted a total of 714 telephone interviews with day care providers in specific markets across the state of Texas. These interviews were conducted from July 24, 2008 to August 9, 2008.

In order to participate in the study, respondents were required to meet the following criteria.

- Must appear on the list of day care centers located in the state of Texas that receive USDA subsidies to offer snacks to preschool-aged children
- Must currently provide child care services for children 10 years of age or younger
- Must provide snacks to children who receive care at the respondent's facility

Additionally, quotas were implemented by metropolitan area to ensure that the overall demographic representation of the survey was consistent with current Census data.

The ratio of dials per survey completed was 9:1, and the average survey length was 20 minutes.

Response Rate

The response rate for this study was 21.4%, according to the standard AAPOR RR3 calculation:

$$\text{Cat 1}/\text{Cat 1} + \text{Cat 2} + e(\text{Cat3}),$$

where $e = (\text{Cat 1} + \text{Cat 2}/\text{Cat 1} + \text{Cat 2} + \text{Cat 4})$.

Final dispositions about the surveys are presented in the following table.

Final Dispositions

Eligible, Interview (Category 1)	
Completed	714
Eligible, No Interview (Category 2)	
Refused to participate	38
Unknown Eligibility, No Interview (Category 3)	
Telephone always busy	242
No answer	800
Call blocking	71
Language problem	94
Unknown if eligible provider at telephone number	1,657
Not Eligible, No Interview (Category 4)	
Fax/data line	46
Nonworking number	469
No eligible provider at telephone number	69
Quota filled	181

Factor Analyses

As mentioned in the detailed findings, a number of factor analyses were run on the data in an attempt to reduce large multi-item batteries to fewer dimensions. One such application concerned the questions on children's eating habits outside of the centers.

Overall, a main factor emerged that can best be described as a clustering of items that have to do with what can be called "center strengths," such as providing lessons about nutrition and paying attention to what foods the children like. A second factor that emerged focuses on the children's overall outside food provision and relates to the lack of nutrition afforded to children from outside of the center. A final factor is generally focused on cost concerns.

Factors and Factor Loadings

Items	Center Strengths	Overall Outside Food Provision	Cost Concerns
We have regular lessons for our preschoolers about healthy eating.	.743		
At our center we monitor what the children like as snack foods, and take that into consideration when menu-planning.	.719		
We have many lessons, toys, and activities to guide our teaching about healthy eating.	.715		
Child care providers like me spend more time with kids than their parents do and probably know what foods they like.	.627		
Parents are often surprised to hear their children eat certain foods at child care because they think they do not like those foods.	.599		
Children often come to school with fast-food breakfasts from places like McDonald's.		.761	
Parents often send their children to child care with junk food or sweets.		.671	
Most parents today do not know how to properly feed their children.		.571	
Children need to eat more at child care on Fridays and Mondays because they probably do not get enough of the right foods at home over the weekend.		.565	
Many children are hungry when they arrive in the morning.		.364	
Most families today do not eat dinner together.		.279	
The CACFP does not pay enough to cover snacks, and I spend more than I receive from them to offer healthy snacks.			.661
In the evenings, parents often wait outside until their children finish their evening meal rather than take them home for dinner.			.639
Many children eat their only real meals at child care centers like mine.			.484
Most parents do not introduce fruits and vegetables to their children.			.336

Also as detailed in the findings, a factor analysis was run on the training battery, with the following results.

Factor Analysis on Training

Training Events and Tools	Indirect Training	Direct (Interactive) Training
Activities and lesson plans	.818	
Recipes/menu suggestions	.744	
Toys and learning tools	.738	
Child nutrition needs	.643	
Meetings with other child care providers to discuss healthy eating		.826
One-on-one technical assistance		.798
Cooking conferences and demonstrations		.742
Kitchen math for cooks		.551

METHODOLOGY –PARENTS AND CHILDREN'S DIETARY HEALTH SURVEY

The Texas Department of State Health Services (DSHS) contracted SUMA/Orchard Social Marketing, Inc. (SOSM) to conduct an evaluation of food service practices for children among parents and day care centers. This study focused on parents and the incorporation of recommended fruit and vegetable servings when providing meals for children.

Specifically, SOSM's charge was to suggest potential policies to be implemented by the Texas Department of Agriculture with regard to provision of healthy snacks to young children. Therefore, the primary objective of this telephone survey was to gauge parents' awareness of the health benefits of eating the recommended number of servings of fruits and vegetables on a daily basis.

Specifically, the study examined the following topics.

- Knowledge about proper storage and preparation of fruits and vegetables
- Perceptions of the cost of purchasing fresh fruits and vegetables
- Cultural norms and practices regarding preparing and serving fruits and vegetables
- Barriers to purchasing and/or preparing fruits and vegetables
- Preferred ways of learning about food preparation
- Ways of teaching children the importance of fruits and vegetables
- Best methods for distributing information about fruits and vegetables
- Awareness of appropriate numbers of servings of fruits and vegetables to babies, toddlers, and young children
- Barriers to providing healthy snacks to young children
- Perceptions about purchasing and consuming local produce
- Knowledge of community resources that increase access to fresh fruits and vegetables
- Awareness of and barriers to other obesity-prevention factors, including eating whole grains, limiting sweetened beverages, and being physically active

Methodological Overview

- A total of 1,980 interviews were conducted with parents.
- Of the interviewees, 368 were at or above the federal poverty level (FPL).
- The remaining 1,603 were below the FPL.

In order to participate in the study, respondents were required to meet the following criteria.

- Have at least one child 10 years of age or younger
- Not work in market research, advertising, or any other type of media
- Make decision regarding what their children eat

Additionally, quotas were implemented to ensure demographic representation overall relative to current Census data by:

- Metropolitan area
- Language of interview
- Ethnic background

The ratio of dials per survey completed was 48:1, and the average survey length was 15 minutes.

Response Rate
The response rate for this study was 21.4%, according to the standard AAPOR RR3 calculation:

$$\text{Cat 1} / \text{Cat 1} + \text{Cat 2} + e(\text{Cat3}),$$

where e = (Cat 1 + Cat 2 / Cat 1 + Cat 2 + Cat 4).

Final dispositions about the surveys are presented in the following table.

Final Dispositions

Eligible, interview (Category 1)	
Complete	1,980
Eligible, no interview (Category 2)	
Refused to participate	180
Broke off	280
Unknown eligibility, no interview (Category 3)	
Telephone always busy	2,828
No answer	14,485
Answering machine	33,772
Call blocking	871
Housing unit, unknown if respondent is eligible	2,643
No screener completed	15,797
Not eligible, no interview (Category 4)	
Fax/data line	999
Nonworking number/disconnect	11,540
Disconnected number	1,323
No eligible respondent	8,318
Quota filled	645
TOTAL	95,661

Scaling and Computed Variables

A number of derived variables were generated in this report, primarily to develop more understandable outcomes and to combine measures when the data supported such combinations and when there was some face validity for doing so.

Juice Compared to Soft Drinks

The first derived variable was the "Juice Compared to Soft Drinks" measure, which was ultimately coded into five overarching categories:

1. At Least More Juice Than Soft Drinks/Four Times or More Juice Than Soft Drinks
2. Two Times More Juice Than Soft Drinks
3. Equal Amounts of Juice and Soft Drinks
4. Two Times More Soft Drinks Than Juice
5. At Least Four Times or More Soft Drinks Than Juice

The measure was developed in a number of steps. The first was to take Questions 18a and 18c (*Again, thinking of your oldest child age 10 or younger, how often does he/she drink 100% fruit juice/soft drinks, Kool-Aid, Gatorade, Sunny Delight, or other fruit drinks or punches?*) and conduct a standard recoding of the original ordinal measure into an interval measure. Specifically, a "per day" interval measure was created by coding "more than once per day" = 2, "daily" = 1, "a few times per week" = .5, "rarely" = .05, and "never" = 0. Although this is just a rough approximation of actual consumption, it does provide excellent comparative data, since both the measure for juice and the measure for soft drinks were recoded in the same fashion.

The second step was to compute a new variable in which the soft drinks: juice ratio was calculated by dividing the juice-per-day variable by the soft-drinks-per-day variable. Finally, this raw variable was coded into categories: Any number from 0 to .29 = four times or more juice than soft drinks, .5 = two times more juice than soft drinks, 1 = equal amounts of juice and soft drinks, 2 = two times more soft drinks than juice, and scores of 3 or above = four times more soft drinks than juice.

Reasons for Not Eating Fruits and Vegetables: Summative Scales

As detailed in this report, many reasons were probed for why respondents did not eat more fruits and vegetables. Thus, to simplify analysis, the need arose to reduce this large number of reasons to summative reasons. As is common for such a task, factor analysis was used to explore whether the data provided statistical justification for the existence of underlying factors to these reasons.

Overall, the factor analysis supported the expectation that a number of reasons would load onto an "availability" dimension and others would load onto a "preparation" dimension. Still others would load onto a "taste" dimension. No other clear dimensions were uncovered, so these were

the only three scales to be computed. (However, a fourth dimension—"expense"—was added as another obvious driver of low fruit and vegetable consumption. Nevertheless, this dimension was based on the single reason "too expensive" and not on a derived scale of multiple measures.)

Factor Matrix and Loadings

	Availability	Preparation	Safety
Not available in my neighborhood	.728		
Not available in restaurants	.711		
Not available at work	.517		
They take too much time to prepare		.525	
They are messy		.475	
Not sure how to prepare		.463	
Not in the habit		.221	
Not all family members like taste			.813
Family members picky			.797

Extraction Method: principal component analysis. Rotation Method: Varimax with Kaiser normalization.
A rotation converged in 7 iterations.

Based on these results, simple mean-based scales (averaging all measures in each factor together into an average scale, for example an average "availability" score) were derived.

Physical Exercise Locations

Again, in order to reduce the number of analyses required, the extent to which a useful exercise scale could be computed was explored. Questions 29a–29d asked, "Do you use walking trails, parks, playgrounds, or sports fields/public recreation centers/private or membership-only recreation facilities/schools that are open in your community for physical activity?" Chronbach's alpha was used to assess whether these four measures could be combined into an additive scale. For these four measures, $a = .51$, which is marginal at best, and therefore the scale was computed simply by adding up the number of locations a respondent mentioned as places used for physical activity, ranging from zero to four. Analyses showed this variable to be predictive in expected directions; thus, while the alpha measure was low, the data did support a high degree of construct validity for the measure.

Neighborhood Quality

The survey asked about a number of measures associated with neighborhood quality:

> Question 30a: Overall, how would you rate your neighborhood as a place to walk? Would you say your neighborhood is a pleasant place to walk?
> Question 30b: For walking at night, would you describe the street lighting in your neighborhood as excellent, good, fair, or poor?
> Question 30c: Does your neighborhood have sidewalks?
> Question 30d: How safe from crime do you consider your neighborhood to be?
> Question 30e: Generally speaking, would you say most people in your neighborhood can be trusted?

These questions were all recomputed onto a 1–5 scale. Questions 30a and 30d were originally scaled from 1 to 5, while the scale for Question 30b was originally 1–4 and had to be recoded to spread to a maximum value of five. Questions 30c and 30e were dichotomous, and therefore "no" = 1 and "yes" = 5 in the recode.

Chronbach's alpha was again used to gain statistical justification for combining these five variables into an overall neighborhood quality measure. Alpha was acceptable at .62, and thus the five measures were averaged into a single neighborhood quality score.