



12-1995

An Assessment of Nutrition Policies and Practices in Licensed Child Care Agencies in Tennessee

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To the Graduate Council:

I am submitting herewith a thesis written by Nicole Anne Cunningham entitled "An Assessment of Nutrition Policies and Practices in Licensed Child Care Agencies in Tennessee." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nutrition.

Betsy Haughton, Major Professor

We have read this thesis and recommend its acceptance:

Paula Zemel, Charles Hamilton

Accepted for the Council:

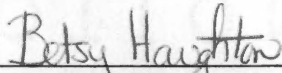
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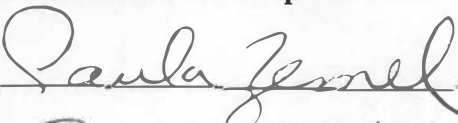
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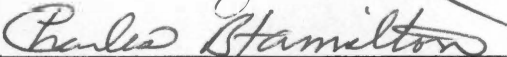
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Dr. Betsy Haughton, Major Professor

We have read this thesis
and recommend its acceptance:





Accepted for the Council:



Associate Vice Chancellor
and Dean of The Graduate School

**An Assessment of Nutrition Policies and Practices
in Licensed Child Care Agencies in Tennessee**

A Thesis

Presented for the

Master of Science

Degree

The University of Tennessee, Knoxville

Nicole Anne Cunningham

December 1995

DEDICATION

This thesis is dedicated to my parents, Colin and Joan Cunningham, for their loving support and encouragement.

ACKNOWLEDGEMENTS

I would first like to thank my major professor, Dr. Betsy Haughton, for her guidance, support and confidence in my abilities. I would like to thank also Dr. Paula Zemel and Dr. Charles Hamilton, my other committee members, for their assistance. I would like to thank Ramona DeBoer, Nutritionist with the State of Tennessee Department of Human Services Community Services Section and Phil Acord, President of the Tennessee Association for the Education of young Children, for their support of this research.

Thanks must go also to Hollie Raynor for her encouragement, insight and understanding.

ABSTRACT

Objective Research was conducted to determine the extent to which a sample of licensed child care agencies in Tennessee met 31 nutrition and food service standards as contained in the *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs* and to identify any significant differences by type of agency, USDA Child and Adult Care Food Program (CACFP) participation, and profit status.

Design A random sample of 300 licensed child care agencies stratified by type was surveyed by mailed questionnaire composed of 59 open- and closed-ended items and five-point Likert-like scaled items. Three primary scores were calculated to describe Performance (with four subscores: Snack Time Performance; Infant Feeding Performance; Toddler/Preschooler Feeding Performance; and Mealtime Performance), Written Policies, and Staff and Environment.

Statistical Analysis Analyses included frequencies, means, and standard deviations for descriptive data. Significant differences were identified by the Wilcoxon rank sum and Kruskal-Wallis tests.

Results A total of 53.6% (n=158) respondents returned surveys, of these 93.7% (n=148) were useable. The Performance, Written Policies, and Staff and Environment scores were 86.9, 6.5, and 3.5 (maximum possible points = 100.0, 12.0, and 5.0,

respectively). Significant differences were found for type of agency where both family day care homes and group day care homes met the standards included in the Staff and Environment Score better than child day care centers. Participants in CACFP had significantly higher score than nonparticipants for Written Policies and Staff and Environment Scores. Nonparticipants in CACFP had significantly higher scores than participants for the Snack Time sub-score. For profit agencies had significantly higher scores than nonprofit agencies for Staff and Environment. Results indicate that agencies do not always have written polices covering: staffing; food procurement, preparation and service; nutrition education; and menus as recommended in the Guidelines. Nutritionists or Dietitians are consulted infrequently.

Applications/Conclusions Results suggest that involvement of Nutritionists or Dietitians, having written nutrition plans and maintaining low child to staff ratios at mealtime are areas that would require some effort to meet the standards. The State Department of Human Services was identified as the primary source of nutrition information therefore, Registered Dietitians at the community level can build partnerships with child care agencies through the Department of Human Services.

PREFACE

An explanation of the format used by this thesis is necessary to assist the reader. The thesis consists of two parts. Part I contains an extensive literature review and outlines the purpose of the study. Methods, results and discussion are found in Part II and are written in journal style.

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PART I

INTRODUCTION, PURPOSE AND LITERATURE REVIEW

INTRODUCTION

The provision of adequate nutritional care for children enrolled in child care agencies is a growing concern in our nation (1). This concern raises the issue of the need for increased monitoring of nutrition policies and practices in child care to ensure the provision of adequate nutrition for children (2). Currently, the Child and Adult Care Food Program (CACFP), administered by the United States Department of Agriculture (USDA), monitors the nutritional adequacy of meals served to children enrolled in child care agencies that participate (2). Other agencies that address nutrition and food service in child care include states' licensure agencies. Until recently, no national health and safety standards for nutrition and food service existed. This left the states to determine individually which nutrition and food service issues were important and should be monitored (3).

The American Academy of Pediatrics (AAP) and the American Public Health Association (APHA) recently published the *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs* (4). These guidelines, intended for use as goals for practice and guidelines for implementation, were designed for application to all child care agencies, whether or not the agencies participate in the CACFP. Developed to supplement existing regulations and performance standards, the guidelines include 118 nutrition and food service standards in 16 categories (4). The

goal of this research was to determine the extent to which licensed child care agencies in Tennessee currently meet 31 nutrition and food service standards for general requirements, nutrition for infants, nutrition for toddlers and preschoolers, and meal service, seating and supervision established by the AAP and the APHA.

PURPOSE & LITERATURE REVIEW

Trends in Child Care

In the past twenty years there has been a dramatic increase in the number of mothers of children under the age of six years who have entered the labor force. In 1970, 29% of mothers of children under the age of six were employed (5). By 1983 this percentage increased to 50% of all mothers with children under six. These 8.9 million children required some type of day care service (6). In 1990, 50% of mothers of preschool children and 54% of mothers of children under the age of one year were employed outside the home (7). The American Dietetic Association (ADA) (2) estimates the number of children currently requiring day care in America to be 23 million. Approximately 5.1 million of these preschool children are enrolled in child care centers and 4 million are enrolled in family care homes (2). It is estimated that by 1995 75% of all mothers will be working outside the home (7).

There are several factors that may be associated with this increase in the

number of mothers employed outside the home. In the United States today 25% of all children are being raised in single parent homes. Of these homes, 90% of the single parents are women (7). Another factor maybe the need for two incomes for a family of four to reach median income levels (8). This need for additional income has resulted in parents returning to work when their children are infants rather than when their children enter kindergarten as many women did two generations ago (8). In addition, women may work outside the home for the fulfillment of career goals.

Since there are currently 23 million children requiring child care, the quality of care is a critical issue (9). There are important nutrition and food service considerations related to quality of care, including issues such as menus, mealtime environment and staffing. Other concerns regarding quality of care are the nutritional quality and adequacy of food provided in child care and the nutrition knowledge of care givers. In addition, child care programs assume some responsibility for socialization and development of food habits of children. Caregivers are integral influences on the formation of food preferences and subsequent eating habits of young children (10). Implementation of standards within child care agencies that address nutritive content of meals served and sanitary practices may provide a model for parents to emulate (11). A significant concern to professionals and parents is also the development of lifelong eating habits, which begin to develop during the critical period between 2 to 5 years of age. Such eating habits may affect the risk of chronic diseases (10-11). Therefore, it

is crucial that children in day care are exposed to foods and eating behaviors that promote healthy growth and development (1). These concerns and implications indicate a need to establish and monitor nutrition and food service standards for child care agencies (12).

Types of Child Care

The child care system in the United States consists of various kinds of arrangements that include, for example, child care centers, regulated and non-regulated family day care homes, group day care homes, and care provided by a relative or other individual in the home (1). In most states, child care is regulated through some form of licensure. In Tennessee, three basic types of licensed child care agencies are available: child care centers; group day care homes; and family day care homes. The definition of a child (day) care center is an agency that receives 13 or more children under 17 years of age for less than 24 hours per day, without transfer of custody. This agency may be operated by a person, agency, corporation, institution, religious group or other group for profit or non-profit purposes. The second type of child care service, group day care home, provides care for 8 to 12 children for some part of the 24-hour day. This type of child care program is located usually within a family residence. The third type of child care service, family day care homes, provides care for at least 5 but no more than 7 children. This care is provided in a family-type setting (13).

In addition to defining different types of child care services, the state of Tennessee also makes distinctions among the age groups of children served (13). An infant is one aged 6 weeks to 15 months or a "non-handicapped¹ child" who is not walking. A toddler is a child aged 12 to 30 months or a "non-handicapped child" who is walking. A preschool child is one aged 31 months to 5 years (13). The AAP and the APHA also have definitions for categories of children: an infant is from birth to ambulation (0-12 months); a toddler is from ambulation to toilet training (13-35 months); and a preschooler is from toilet training to entry in regular school (36-59 months) (4). A comparison of the state's and the AAP/APHA's definitions shows the age ranges identified vary slightly. However both identify ambulation as the defining criteria.

The child care system in Tennessee consists of various types of agencies offering services to various ages of children. The definitions established by the state clearly describe the type of service available (ie: regulated or non-regulated) and for whom the service is provided (according to age).

Nutrition in Child Care

Infancy and childhood are critical periods requiring adequate nutrition to ensure

¹According to the State of Tennessee, "handicapped" is synonymous with "disabled" as contained in Public Law 99-457.

proper growth and development (14). The health and nutrition status of children is addressed in the national health promotion/disease prevention objectives for the year 2000 contained in *Healthy People 2000* (15). There are several nutrition objectives for children including:

- 2.4 Reduce growth retardation among low-income children aged 5 and younger to less than 10 percent.
- 2.10 Reduce iron deficiency to less than 3 percent among children aged 1 through 4 and among women of childbearing age.
- 2.17 Increase to at least 90 percent the proportion of school lunch and breakfast services and child care food services with menus that are consistent with the nutrition principles in the *Dietary Guidelines for Americans*.
- 2.19 Increase to at least 75 percent of the nation's schools that provide nutrition education from preschool through 12th grade, preferably as part of quality school health education.

The fact that there are nutrition objectives for children for the year 2000 which can be applied to child care agencies indicates a need to monitor compliance of child care agencies with standards that will lead to fulfillment of these objectives.

Child care agencies that participate in the CACFP have guidelines developed by the USDA for meals and foodservice designed for provision of adequate nutrition (2).

The requirements include provision of at least one meal and two supplements or two meals and one supplement for children who are in care for 8 hours or less. For children in care 9 hours or more the provision of either two meals and two supplements or one meal and three supplements is required. Midmorning and midafternoon

supplements offered to all children are required also. In addition, food is to be offered to children at intervals not less than two hours and not more than three hours apart unless the children are sleeping (4). However, a study conducted by Drake (16) suggests that these guidelines may not be adequate. She states that the importance of offering a wide variety of foods or foods with high nutrient density is not emphasized by the USDA guidelines. Application of nutrition and food service standards that incorporate the *Dietary Guidelines for Americans* (17) might address some of Drake's concerns.

In 1991 there were approximately 1.9 million children in the United States who were enrolled in day care centers or family day care homes that participated in the CACFP. In 1992 child care facilities that participated in the CACFP served more than 1 billion meals, doubling the number of meals served in 1982, or 493 million (2). Extensive participation in this program provides an excellent opportunity to influence positively the nutritional status, eating habits, food preferences and health of these children.

Regulation of Child Care

At the present time no federal health and safety regulations exist for child care except for child care centers on military bases and Headstart programs (18).

Consequently, individual states have primary responsibility for setting and enforcing

child care regulations concerning health, safety and developmental needs of children in care (6). In Tennessee the Department of Human Services is responsible for the licensing and regulation of child care agencies.

In 1991 Runyan et al (18) conducted a study to analyze child care safety regulations in 45 states. The study analyzed the content, formulation and implementation of state policy under 36 criteria established from three sets of national guidelines. The researchers found that large deficiencies existed since 24 of the 36 identified criteria were not met or not even mentioned in the state regulations. The authors attributed these deficiencies to inadequate regulatory processes for child safety, which may or may not be true of nutrition regulations.

The lack of a comprehensive set of national health and safety standards for the regulation of child care results in inconsistent and sometimes inadequate state laws, policies and regulations (18). Currently, the regulation of child care falls under the umbrella of various departments, divisions and agencies at the state and local levels (19). Typically there are at least three different legal systems that regulate child care: licensing system; building code system; and health codes (4). In most states the state Department of Human Services is the licensing agency, while agencies other than the licensor regulate child care services. The building code inspections include fire and building safety and zoning regulations (8). The state or local health department usually serves as the sanitarian and regulates health codes. One problem associated with

regulation of health codes is that frequently the health codes applied to child care centers are the same health codes established for restaurants. Morgan et al (8) reported that in 1986 there was only one state, Vermont, that had written a health code that addressed regulations specifically relating to the health and safety of young children in child care centers. Morgan et al (8) and Koch (19) emphasized also that regulatory coordination needs to be achieved in order to ensure quality care for every child in every state.

Standards for Child Care

Standards for child care traditionally have been the responsibility of the state and usually the licensing regulations are applied as standards. The AAP and the APHA recognized that the licensing regulations varied among states and thus conducted a study to evaluate state requirements (20). This survey study analyzed the licensing requirements of all 50 states and found that a wide range of coverage existed. The findings showed that 1/4 to 1/2 of states which license child care miss crucial health and safety standards needed to protect children, including standards for the prevention of infectious disease and injuries, children with special needs, staff health, and nutrition (3,20)

The findings of this survey led the AAP and the APHA to develop jointly the *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child*

Care Programs (4). These standards were selected to represent "what is achievable and reasonably doable and necessary to protect the health of children in out-of-home care" (20, p 3387). They were developed utilizing an interdisciplinary approach and cover nine areas: staffing; activities for healthy development; health protection and health promotion; nutrition and foodservice; facilities, supplies, equipment and transportation; infectious diseases; children with special needs; administration; and recommendations for licensing and community action. The standards were designed to apply to child care centers, family child care homes, special facilities for ill children, facilities for children with special needs, school-age child care facilities, public schools, Headstart and organized part-time programs (4). The establishment and implementation of national health and safety standards for child care would ensure that all states protect children in care in every crucial aspect, including nutrition.

The standards were developed based on supportive research data and expert opinion (21). They were designed to represent the level of performance that is above the minimal acceptable, but below the point where additional effort and expertise would not result in commensurate improvements in health and safety (3). The standards define the goals of desired practice and expected performance and therefore may be used as the basis for training and funding requirements (21). The primary application of the standards is to upgrade other types of requirements, such as state licensing and accreditation requirements (4).

The Centers for Disease Control and Prevention conducted a study (22) in November and December of 1990 to determine the extent to which infectious disease and injury policies and practices in child care centers in the United States were consistent with the recommended AAP/APHA guidelines. The directors of 2003 licensed child care centers were interviewed by telephone. Results showed that compliance with the practices recommended varied widely among the child care centers. Variations among centers from state to state suggested that other factors may be more strongly associated with performance of recommended practices. These factors included: differences in child care licensing; regulation; enforcement; staff training; availability of technical consultation; and economic resources. Higher compliance was reported for infectious disease control than for injury control practices. These findings indicate that the infectious disease and injury control policies and practices fall short of the AAP/APHA guidelines. They also suggest that implementation of some of the recommended policies and practices will require substantial changes in behavior or facilities (22).

Nutrition Standards for Child Care

Currently there are no national nutrition and food service standards specific to child care, despite the fact that several professional organizations have published position statements and recommendations for child care agencies. The American

Dietetic Association's (ADA) position statement indicates that "all child care programs should achieve recommended standards for meeting children's nutrition and education needs in a safe, sanitary, supportive environment that promotes healthy growth and development" (2, p 324). The ADA recommendations are consistent with recommendations and standards established by several organizations, including those set by the U.S. Department of Health and Human Services for the Head Start Program and those set by USDA for the CACFP (2). In addition the ADA recommendations reflect those of the APHA and the AAP for out-of-home child care programs (4) and of the Society for Nutrition Education for child care settings (23). The frequency with which nutrition and food service standards are addressed by the various state regulatory agencies and professional organization position statements emphasizes the importance of nutrition and policies and practices in child care (1).

The *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs* (4) are significant because they include 118 identified nutrition and food service standards, categorized into 16 areas. Table 1.1 summarizes the categories for the nutrition and food service standards. Currently there data are available to indicate the extent to which child care agencies have policies or practices consistent with these guidelines.

Table 1.1 Categories and Numbers of Nutrition and Food Service Standards, *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs*

CATEGORY	STANDARDS (n)
General Requirements	7
Nutrition for Infants	13
Nutrition for Toddlers and Preschoolers	3
Nutrition for School-aged Children	1
Nutrition for Children with Special Needs	4
Meal Service, Seating and Supervision	18
Kitchen and Equipment	17
Access to Kitchen	2
Food Safety	29
Maintenance	7
Staffing	5
Food Brought From Home	3
Meals From Outside Vendors or Central Kitchens	3
Nutrition Learning Experiences for Children	3
Nutrition Education for Staff	2
Nutrition for Parents	1
TOTAL:	118

Child Care in Tennessee

According to the Tennessee State Department of Human Services' Child Care Resource and Referral Service there currently are 4,600 licensed child care agencies serving 203,482 infants and preschool-aged children. This is a dramatic increase from 2,000 licensed child care providers that served 95,000 children in 1986 (24). In Tennessee the State Department of Human Services (DHS) has the legal responsibility for licensing child care agencies under the licensing law contained in Tennessee Code Annotated, Section 14-10-101 through 14-10-130 (13). The three types of child care agencies subject to licensing in Tennessee are child (day) care centers, group day care homes and family day care homes. Another type of child care in Tennessee, registered family day care home, provides care for up to four children and is under voluntary regulation in some counties (25). This type of agency does not require licensure.

The majority of nutrition regulations enforced by the DHS in Tennessee are those established for the CACFP (13). These regulations address meal planning, meal service and food safety. However, DHS has established additional recommendations. These recommendations include: a minimum nutrition course or workshop every five years for at least one full-time staff member; meal planning assistance from a qualified nutritionist or dietitian; checking of sack lunches for nutritious food; adults eating the same food as the children; two hour interval between meals and snacks; and afternoon snack service at least 15 minutes after children wake from naps (13).

Conclusion

In order to prepare children successfully for the challenges they will face, their health and well-being must be protected and improved. A vital component of achieving good health and well-being is proper and adequate nutrition. Child care is an opportune setting to influence positively the nutritional status and eating habits of children.

The implementation of national performance standards for child care would ensure that all states protect children in day care in every crucial aspect, including nutrition. Since there are limited data on the extent to which nutrition and food service standards in the *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs* are met, this study described the extent to which a random sample of licensed child care agencies in Tennessee currently meet 31 nutrition and food service standards for general requirements, nutrition for infants, nutrition for toddlers and preschoolers, and meal service, seating and supervision developed by the AAP and the APHA.

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PART II

AIMS OF RESEARCH, METHODOLOGY AND FINDINGS

INTRODUCTION

The provision of adequate nutritional care for children enrolled in child care is a growing concern in the United States (1). Such concern raises the issue of the need for increased monitoring of nutrition practices and policies in child care to ensure the provision of adequate nutrition for children (2). The American Dietetic Association estimates the number of children currently requiring day care in America to be 23 million (2). It is estimated that by 1995, 75% of all mothers will be working outside the home, an increase from 50% of mothers of children under the age of six who worked outside the home in 1990 (3). This trend of increasing need for child care services has important nutrition and food service considerations for menus, mealtime environment and staff. The trend raises concern also about the nutrition knowledge and attitudes of staff, since caregivers are an integral influence on the formation of food preferences and subsequent eating habits of young children (4). There may be a need, therefore, to establish and monitor nutrition and food service standards for child care so there is consistency among the different types of child care and among all the states (5).

At the present time no federal regulations exist for child care except for centers on military installations and Headstart programs (6). Therefore, regulation of child care falls under the umbrella of various departments, divisions, and agencies at the state and local levels. This has resulted in inconsistent and sometimes inadequate state laws,

policies, and regulations (7). The American Academy of Pediatrics (AAP) and the American Public Health Association (APHA) recognized that licensing regulations vary from state to state and thus conducted a study (8) to evaluate state requirements. Study findings showed that 1/4 to 1/2 of states which license child care miss crucial health and safety standards needed to protect children (8). Therefore, the AAP and the APHA developed jointly the *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs* (9). These standards were designed to apply to all child care agencies through their incorporation into existing licensing and accreditation requirements. However, the degree to which these standards are currently being met by child care agencies has yet to be determined.

This research was designed to address two questions:

- 1) To what extent does a random sample of licensed child care agencies in the state of Tennessee currently meet 31 nutrition and food service standards for general requirements, nutrition for infants, nutrition for toddlers/preschoolers, and meal service, seating and supervision developed by the AAP/APHA?
- 2) Are there significant differences in the extent to which these standards are met among:
 - a) three different types of licensed child care agencies (child care centers, family day care homes, group day care homes;
 - b) United States Department of Agriculture (USDA) Child and Adult Care Food Program (CACFP) participants and nonparticipants; and
 - c) for profit and nonprofit agencies?

METHODS

Subjects

Subjects were directors of licensed child care agencies in Tennessee and selected from the *County Directory of Licensed, Approved, and Registered Child Care Agencies* (10). This is a statewide directory of all licensed child care agencies and registered day care homes, which is compiled annually by the Child Care Resource and Referral Service of the Tennessee Department of Human Services. Using the October 1994 directory, child care agencies were selected according to the following criteria: the agency 1) was licensed in Tennessee; and 2) served three age groups of children, or infants (age 0-15 months, non-ambulatory), toddlers (age 12-30 months, ambulatory) and preschoolers (age 31 months to 5 years). Nutrition and food service standards were written to address the needs of children in these age groups. Although 4,600 child care agencies were licensed by the state of Tennessee, only 587 met these criteria. Most of those agencies not meeting the selection criteria either served school aged children or did not serve all three of the previously stated age groups. Three types of child care agencies met the selection criteria: child care centers (n=259; 44.1%); family day care homes (n=243; 41.4%); and group day care homes (n=85; 14.5%). From this population a random sample stratified by type of agency (n=300) was taken.

Day Care Types

In the State of Tennessee three types of child day care agencies are eligible for licensure:

- 1) Child (Day) Care Center, an agency operated by a person, society, agency, corporation, institution, or religious organization or any other group which receives 13 or more children under 17 years of age or less for less than 24 hours a day, without transfer of custody;
- 2) Group Day Care Home, an agency which receives 8 to 12 children for less than 24 hours a day; and
- 3) Family Day Care Home, an agency, located usually in a family-type setting which receives 5 to 7 children for less than 24 hours a day (11).

Survey Instrument

A survey instrument (Appendix A) was developed using the standards for four nutrition and food service categories (General Nutrition, Nutrition for Infants, Nutrition for Toddlers and Preschoolers, and Meal Service, Seating and Supervision) from the *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs* (9). The standards were compared with the Tennessee State Department of Human Services' licensing regulations for child care services. Since this survey was developed to assess nutrition policies and practices not already regulated by the state, AAP/APHA standards that matched the state's licensing regulations were excluded in the survey's development. There were a total of 14 standards that partly or completely

matched the licensing regulations. From the remaining 31 standards, survey items were developed.

The survey consisted of two sections: Food and Nutrition Policies and Practices (48 items); and Demographics (11 items). Table 2.1 summarizes the number of items and standards per category that were included.

The 59-item survey included 36 five-point Likert-like scaled questions, 16 closed-ended questions, and 7 open-ended questions. Responses for the scaled items indicated the percent of time (0% - 100%) the agency performed/practiced that standard. Additional response options were "don't know" and "not applicable". The rationale for inclusion of the "don't know" response was to provide a response for those who were not cognizant of a policy or practice.

Definition of Scores

There were three primary scores used to describe nutrition policies and practices: Performance Score; Written Policies Score; and Staff and Environment Score. The scoring methods and an example of a completed survey are found in Appendix B. The Performance Score had a maximum possible score of 180 and addressed the extent to which standards were met for practices for: 1) preparing infant feedings and feeding infants (Infant Feeding Performance sub-score [18 items, maximum possible score = 90]); 2) feeding toddlers and preschoolers

Table 2.1 Categorical Summary of Survey Items

CATEGORY	STANDARDS (n)	ITEMS (n)
Demographic	—	11
General Requirements	5	11
Nutrition for Infants	10	18
Nutrition for Toddlers and Preschoolers	3	3
Meal Service, Seating and Supervision	13	16
TOTAL:	31	59

(Toddler/Preschooler Feeding Performance sub-score [3 items, maximum possible score = 15]); 3) offering snacks (Snack Time Performance sub-score [2 items, maximum possible score = 10]); and 4) meal service, seating and supervision (Mealtime Performance sub-score [13 items, maximum possible score = 65]). The Performance Score and each of its four sub-scores consisted solely of Likert-like scaled items.

The Written Policies Score had a maximum possible score of 12 and addressed whether standards for a written nutrition plan, menu components and policies for children with special dietary needs are met or not met. Items included in the Written Policies Score consisted of 6 open- and closed-ended questions. Scoring methods for these questions are shown in Appendix B.

The Staff and Environment Score had a maximum possible score of 5 and addressed whether standards for the number of children fed or supervised eating at one time and the size of utensils and furniture are met or not met. This score was based on 3 open- and closed-ended questions. Scoring methods for these questions are shown in Appendix B.

Each Likert-like scaled item, contained in the Performance Score and each of its four sub-scores, was worth up to 5 points with 0% and "don't know" = 1 point and 100% = 5 points. Responses marked "Not Applicable" by respondents were considered missing values. Performance Scores and subscores were calculated based

on the maximum possible score for responses with non-missing values, considering the maximum value for each scaled item was 5 points. These calculations were done to control for different possible maximum scores among respondents due to "Not Applicable" responses. For example, the Toddler/Preschooler Feeding Performance sub-score contained three questions, each with a maximum of 5 points. If one respondent completed all three questions with a response worth 4 out of 5 points then the sum of the responses would be 12 out of a possible 15 or 80 $[(12/15)*100]$. If a second respondent marked "Not Applicable" to 1 question and marked the remaining 2 questions at 4 out of 5 points then the sum of the responses would be 8 out of a possible 10 or 80 $[(8/10)*100]$. This scoring was applied to all surveys to allow for comparisons of scores. The Written Policies and Staff and Environment Scores were calculated with "no" and "don't know" = 0 and "yes" = 1 (Appendix B).

Procedure

The study was pilot tested for readability and understanding with 12 child care agencies that met the selection criteria, but were selected from the list that remained after the random sample was drawn. Pilot test subjects were contacted by phone. A survey packet was delivered to each subject by the researcher and included: cover letter; letter of support; Food Guide Pyramid poster; and a survey. Upon completion of each survey the researcher reviewed it with the respondent for understanding and

noted all comments. All survey information from the pilot test was analyzed and one modification was made prior to survey administration. This modification was the addition of the response option, "Not Applicable", on the Likert-like scaled items.

The survey was administered using a modified version of the Total Design Method (12). It was mailed to the selected agencies, using the names of directors and addresses obtained from the County Directory. This initial mailing consisted of the survey, cover letter, letter of support, Food Guide Pyramid Poster and postage paid return envelope (Appendix A). The letter of support was co-signed by a Nutritionist from the State of Tennessee Department of Human Services' Community Services Section and the President of the Tennessee Association for Education of Young Children, indicating their support for this study of the nutrition policies and practices of child care agencies. In appreciation for participation, a Food Guide Pyramid poster developed by the National Dairy Council was included with the initial mailing (13). A follow-up postcard was sent one week after the initial mailing. The survey was remailed to non-respondents three weeks after the initial mailing. A second follow-up with non-respondents was not conducted as is specified by the Total Design Method because of cost. Due to respondent burden and cost, it was decided to not follow-up with a survey of non-respondents, although it was recognized that this would limit generalization. Each subject was assigned randomly a number for follow up purposes while maintaining anonymity of the surveys. The study was approved for human

subjects research by the University's Office of Research Administration before survey administration.

Statistical Analysis

Data were double-entered, verified and analyzed using university computing facilities and Statistical Analysis System (SAS) programming (version 6, 1990, SAS Institute, Cary, NC). The extent to which respondents met the standards was determined using frequency, means, and standard deviations. All data were analyzed using nonparametric statistical tests, since the data did not meet the assumptions for parametric tests. Significant differences among types of child care agencies were determined using Wilcoxon Rank Sum test. Differences between USDA CACFP participants and nonparticipants, and profit and nonprofit agencies were assessed using Kruskal-Wallis test. Statistical significance was considered acceptable at $p < 0.05$ and analyses were two-tailed.

RESULTS

Response Rate

Survey responses were received from 53.6% (n=158) of 295 child care agencies; 1.6 % (n=5) were not deliverable. Of the total received, 93.7% (n=148) were determined useable for analysis. Surveys were considered not useable if returned:

blank (n=5); by a non-licensed agency (n=1); or incomplete (n=4). Incomplete was determined by an arbitrary cut-off of 40% unanswered items.

Demographics

Demographic characteristics are shown in Table 2.2. Nearly 60% of surveyed child care centers responded and approximately 41% each of family day care homes and group day care homes surveyed responded. This resulted in proportional representation by type of agency as follows: 53% child care centers; 35% family day care homes; and 12% group day care homes. This was consistent with the distribution of child care agencies in the original list of 44% child care centers, 41% family day care homes and 15% group day care homes.

At least half of respondents were from a suburban area, participated in CACFP, and were nonprofit agencies. Nearly three-quarters of the respondents opened their agencies within the past ten years. A majority of respondents reported their position title as Director. Over 10% of respondents selected "other" as their title. Titles identified by respondents who selected "other" included: owner/operator; day care provider; all of the above; instructor or teacher; senior cook; school nurse; food service manager; food clerk; home base advisor; and self employed.

Over 75% of respondents reported their knowledge of nutrition (Table 2.3) for infants and for toddlers/preschoolers as excellent or more than satisfactory to meet their

Table 2.2 Demographics of Survey Respondents (n=148)

CHARACTERISTIC	NUMBER (n)	FREQUENCY (%)	CHARACTERISTIC	NUMBER (n)	FREQUENCY (%)
Type of Agency: Child Care Center	79	53.4	Position Title^b: Director Assistant Director Head Teacher Nutrition Specialist Food Service Worker Other	123	74.0
Family Day Care Home	51	34.5		2	1.2
Group Day Care Home	18	12.2		11	6.6
Geographic Area^a: Rural Area	26	19.4		2	1.2
Suburban Area	67	50.0		6	3.6
Urban Area	41	30.6		22	13.3
USDA CACFP Participant	80	55.2			
Nonprofit Agency	74	51.0			
Agency opened in 1985 or after	97	72.0			

^a Not all respondents reported this information.

^b Respondents were allowed to select more than one response.

Table 2.3 Summary of Reported Knowledge of Nutrition for Infants and Toddlers/Preschoolers

KNOWLEDGE RATING	INFANTS		TODDLERS/PRESCHOOLERS	
	(n)	(%)	(n)	(%)
Excellent	38	28.6	40	28.2
More than satisfactory	66	49.6	76	53.5
Satisfactory	27	20.3	25	17.6
Less than satisfactory	2	1.5	1	0.7

needs. When asked to identify sources of nutrition information for staff training, nutrition education and meal planning (Table 2.4), nearly one third cited the State Department of Human Services and only 13% cited a Nutritionist or Dietitian. Other identified sources included: nutrition courses; workshops/training; Manna food program¹; nutrition programs; experience as a cook; school menus; local meetings; food service expert; and Children's Hospital.

Policies and Practices of Child Care Agencies

The means for the three primary scores (Performance, Written Policies and Staff and Environment) and the four sub-scores (Snack Time Performance, Infant Feeding Performance, Toddler/Preschooler Feeding Performance, and Mealtime Performance) are shown in Table 2.5. Results indicate a wide variety in the extent to which nutrition and food service standards are met.

Performance Score

The Performance Score's mean was 87, and of its four sub-scores, the highest mean was for Toddler/Preschooler Feeding Performance and the lowest was for Infant Feeding Performance. No sub-score was less than 85 (maximum possible = 100).

¹This program, reported by two respondents, is not a statewide program therefore, a description is not available.

Table 2.4 Identified Sources of Nutrition Information

SOURCE OF NUTRITION INFORMATION^a	Number (n)	Frequency (%)
State Department of Human Services	110	31.4
Journals	50	14.3
Magazines	50	14.3
Nutritionist or Dietitian	47	13.4
USDA	44	12.5
Human Resource Agency	37	10.5
Other	12	3.4

^a Respondents were allowed to select more than one response.

Table 2.5 Mean Scores, Ranges, and Maximum Possible Scores for Survey Respondents

SCORE	N	MEAN + SD	RANGE	MAXIMUM POSSIBLE SCORE
Performance Score^a	148	86.9 ± 7.2	56.7 - 98.9	100.0
♦ Snack Time Performance^b	145	86.2 ± 18.5	40.0 - 100.0	100.0
♦ Infant Feeding Performance^c	148	85.4 ± 10.9	50.0 - 100.0	100.0
♦ Toddler/Preschooler Feeding Performance^d	147	94.4 ± 10.2	53.3 - 100.0	100.0
♦ Mealtime Performance^e	148	87.2 ± 8.6	53.8 - 100.0	100.0
Written Policies Score^f	148	6.5 ± 3.1	0.0 - 12.0	12.0
Staff & Environment Score^g	148	3.5 ± 1.0	1.0 - 5.0	5.0

^a 36 items (^b 2 items, ^c 18 items, ^d 3 items, ^e 13 items)

^f 9 items

^g 3 items

Written Policies Score

The Written Policies Score evaluated whether the agency had written policies and what those policies addressed. The mean Written Policies Score for the respondents was 6.5 ± 3.1 out of 12.0. For the respondents who had a written nutrition plan (71.9%, n=100), the policy covered the following areas: menu (95.9%, n=93); food procurement, preparation and service (83.3%, n=65); nutrition education (83.1%, n=64); staffing (60.7%, n=37); kitchen layout (46.9%, n=30); and other components (66.7%, n=8). Only 34.4% had plans written by a Nutrition Specialist, Food Service Expert or combination of both. Other professionals identified as who wrote the plan included: director; food program personnel; State Department of Human Services; Human Resource Agency; "myself"; teacher/instructor; Special Services; day care committee; and don't know.

The Written Policies Score included also policies regarding children with special dietary needs. Written permission from the parent/legal guardian prior to modifying the child's diet was required by 71.5% (n=98) of agencies. Over 90% (92.9%, n=131) of respondents required a written list of foods from the parent/legal guardian or health care provider that caused food allergies or that were special needs. However, only 30.4% (n=41) of respondents required a Nutrition Specialist to approve changes made in a child's diet. Menu components were included also in the Written Policies Score. These components included the number of times per day and per week the

following foods are served: iron-rich foods; vitamin C-rich foods; and vitamin A-rich foods (Table 2.6).

Staff and Environment Score

The mean Staff and Environment Score for the respondents was 3.5 ± 1.0 out of 5.0. The mean number of children fed or supervised eating at one time for each age group was: 2.4 ± 1.5 for infants; 4.4 ± 2.2 for toddlers; and 7.5 ± 4.2 for preschoolers. The overall mean for the three age groups combined was 4.8 ± 2.3 . The AAP/APHA standard for the number of children fed or supervised eating at one time is three children. Results indicate that most of the respondents exceeded the standard. Child-sized utensils and child-sized furniture were used by 96.6% (n= 141) and 95.9% (n= 141) of respondents, respectively.

Differences Based on CACFP Participation, Profit Status and Type of Agency

Significant differences in the extent to which the agencies currently meet the standards were found with one sub-score of the Performance Score, Snack Time Performance (Table 2.7). Analysis showed that agencies not participating in CACFP had a significantly higher (91.8 ± 14.7) Snack Time Performance sub-score than participants (81.1 ± 20.1 , $\text{prob} > \text{chisq} = 0.0032$). However, analysis of the Performance Score, Infant Feeding Performance, Toddler/Preschooler Feeding

Table 2.6 Frequency of Offering Foods Rich in Iron, Vitamin C and Vitamin A Compared to Recommendations of AAP/APHA¹ *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs*

VARIABLE	NUMBER of RESPONSES	MEAN \pm SD	AAP/APHA STANDARD
Iron rich foods served per day	85	1.3 \pm 0.6	1.0
Iron rich foods served per week	74	4.9 \pm 2.7	5.0
Vit C rich foods served/day	82	1.9 \pm 0.9	1.0
Vit C rich foods served/week	75	5.7 \pm 4.0	5.0
Vit A rich foods served/day	71	1.4 \pm 0.7	0.6
Vit A rich foods served/week	81	4.6 \pm 2.9	3.0

¹ American Academy of Pediatrics/American Public Health Association

Table 2.7 Scores, Sub-scores, and Significant Differences by Type of Agency, United States Department of Agriculture's (USDA) Child and Adult Care Food Program (CACFP) Participation, and Profit Status (mean \pm standard deviation)

SCORES	TYPE OF AGENCY			USDA CACFP PARTICIPATION		PROFIT STATUS	
	Day Care Center	Family Day Care Home	Group Day Care Home	Yes	No	For Profit	Nonprofit
Performance Score	86.8 \pm 6.7 n=79	87.1 \pm 7.1 n=51	86.6 \pm 9.8 n=18	86.5 \pm 8.0 n=80	87.6 \pm 6.2 n=63	87.0 \pm 6.1 n=64	87.2 \pm 7.5 n=74
♦ Snack Time Performance	89.3 \pm 16.4 n=76	83.9 \pm 18.6 n=51	79.4 \pm 24.4 n=18	81.1 \pm 20.1 ^a n=78	91.8 \pm 14.7 ^b n=62	84.4 \pm 19.7 n=64	88.3 \pm 16.8 n=71
♦ Infant Feeding Performance	85.1 \pm 9.7 n=79	86.1 \pm 11.0 n=51	84.8 \pm 15.5 n=18	86.1 \pm 11.5 n=80	85.1 \pm 9.9 n=63	85.4 \pm 10.9 n=64	85.6 \pm 10.6 n=74
♦ Toddler/Preschooler Feeding Performance	93.8 \pm 11.1 n=79	94.6 \pm 9.1 n=51	96.3 \pm 8.6 n=18	93.8 \pm 10.4 n=80	96.0 \pm 8.3 n=62	96.3 \pm 7.7 n=64	93.6 \pm 11.3 n=73
♦ Mealtime Performance	87.3 \pm 8.3 n=79	87.1 \pm 8.5 n=51	87.4 \pm 10.3 n=18	86.8 \pm 9.3 n=80	87.9 \pm 7.9 n=63	87.2 \pm 8.1 n=64	87.8 \pm 8.8 n=74
Written Policies Score	6.1 \pm 3.3 n=79	7.3 \pm 2.6 n=51	6.4 \pm 2.6 n=18	7.7 \pm 2.6 ^c n=80	5.1 \pm 3.0 ^d n=63	6.7 \pm 3.0 n=64	6.4 \pm 3.2 n=74
Staff & Environment Score	3.0 \pm 0.9 ^e n=79	4.3 \pm 0.6 ^f n=51	4.0 \pm 0.8 ^f n=18	4.0 \pm 0.9 ^g n=80	3.0 \pm 0.9 ^h n=63	3.9 \pm 0.8 ⁱ n=64	3.2 \pm 1.1 ^j n=74

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a,b chisq = 8.6941, prob>chisq = 0.0032

c,d chisq = 24.725, prob>chisq = 0.0001

e,f chisq = 58.177, prob>chisq = 0.0001

g,h chisq = 33.470, prob>chisq = 0.0001

i,j chisq = 16.335, prob>chisq = 0.0001

Performance and Mealtime Performance sub-scores did not yield significant differences for participation in CACFP, profit status or type of agency.

For the second primary score, Written Policies, CACFP participants scored significantly higher (7.7 ± 2.6 , $\text{prob} > \text{chisq} = 0.0001$) than nonparticipants (5.1 ± 3.0).

Significant differences were found for the Staff and Environment Score among: the type of child care agency; between CACFP participants and nonparticipants; and between for profit and nonprofit agencies. Post-hoc Wilcoxon analysis revealed that both family day care homes (4.3 ± 0.6 , $\text{prob} > \text{chisq} = 0.0001$) and group day care homes (4.0 ± 0.8 , $\text{prob} > \text{chisq} = 0.0001$) had significantly higher scores than the child day care centers (3.0 ± 0.9). However, there were no significant differences between family day care homes and group day care homes for this score. CACFP participants (4.0 ± 0.9 , $\text{prob} > \text{chisq} = 0.0001$) and for profit agencies (3.9 ± 0.8 , $\text{prob} > \text{chisq} = 0.0001$) had significantly higher Staff and Environment scores than nonparticipants (3.0 ± 0.9) and nonprofit agencies (3.2 ± 1.1), respectively.

DISCUSSION

The Performance Score for the overall group of respondents was 86.9 out of a maximum score of 100.0. The means of the Performance sub-scores (Snack Time Performance, Infant Feeding Performance, Toddler/Preschooler Feeding Performance, and Mealtime Performance) ranged from 85.4 to 94.4 (Table 2.5). However, the

minimum scores (ranging from 40.0 to 56.7) for the Performance Score and sub-scores indicate there is room for improvement. The significant difference for the Snack Time Performance sub-score indicates that agencies not participating in the CACFP are meeting the standards for serving snacks better than participants; specifically, they are serving snacks more often than participating agencies. This result was somewhat surprising, considering the requirements regarding timing of meals and snacks, provision of commodity foods and monetary reimbursement for meals and snacks served by participants in the CACFP. However, a potential explanation for this finding may be differences in the hours of operation for the agencies or the number of hours children are in care, which this study did not address. For example, agencies that do not participate in CACFP may offer snacks more often than participants due to longer hours of operation.

Results for the Written Policies Score (mean = 6.5 ± 3.1 [maximum possible = 12]) indicate there also is need for improvement in the areas covered by this score. Low scores were attributed to agencies not having a written nutrition plan and respondents not knowing what the plan covered. In addition, required approval by a Nutrition Specialist for changes made in a child's diet was reported by less than one third of respondents. According to these results these are areas that would require some effort to meet the standards. The final component of the Written Policies Score was menu components (iron-rich, vitamin C-rich and vitamin A-rich foods). For this

component (Table 2.6), means for each item did meet and in most cases exceeded the standard set by AAP/APHA (9). Since this survey did not address specifically what foods are offered it is not possible from these data to determine if a variety of foods rich in iron, vitamin C or vitamin A are offered.

Analysis of the Staff and Environment Score revealed that the number of children fed or supervised eating at one time (mean = 4.8 ± 2.3) exceeded the standard (3 children). However, this standard is not age-specific. Age-specific standards were included in the Infant Feeding Performance and Toddler/Preschooler Feeding Sub-scores. Significant differences found for the Staff and Environment Score indicate that: 1) smaller agencies (family [4.3 ± 0.6] and group [4.0 ± 0.8] day care homes) are currently doing a better job at meeting these standards than larger agencies (day care centers [3.0 ± 0.9]); 2) CACFP participants (4.0 ± 0.9) are meeting the standards better than nonparticipants (3.0 ± 0.9); and 3) for profit agencies (3.9 ± 0.8) are meeting them better than nonprofit agencies (3.2 ± 1.1). These results may not be surprising since CACFP participants must meet both USDA standards and state licensing regulations. It would be interesting to investigate cost of service in smaller and for profit agencies to see if there are any relationships to staffing patterns and facility infrastructure, including utensils, furniture and play equipment size.

The results of this study indicate that involvement of the Nutritionist, Dietitian or Nutrition Specialist is limited. Only 13% of respondents indicated that nutrition

information was obtained from a Nutritionist or Dietitian. In addition, less than one third of respondents required Nutrition Specialist approval for changes made in a child's diet and only 27% reported the nutrition plan was written by a Nutrition Specialist. These results are consistent with other studies. A study conducted in Washington state (14) found that both foodservice professionals and non-foodservice staff were involved in planning and preparing food in child care centers. This study addressed the lack of training and knowledge of the non-foodservice staff and recommended more involvement of trained foodservice professionals as well as improved in-service nutrition and food service training for all staff (14). A study conducted by Chang et al (15) showed that child care centers consulted a Nutritionist only occasionally and recommended Nutritionists and Dietitians work to increase awareness of the importance of quality nutrition in child care programs.

There are several limitations of this study. First, the instrument utilized was a mailed survey. Therefore, the results are based on self-reporting which may or may not reflect actual practices. Another limitation is the inability to generalize the results to the overall population at risk. Proportional representation of respondents by type of agency was somewhat consistent with overall population representation. However, without a survey of a sample of non-respondents to verify respondents and non-respondents were from the same population, results must be viewed with some caution. Another limitation is that only 31 nutrition and food service standards were addressed

by the survey and thus results can not be generalized to all nutrition and food service standards.

There are limitations also of the *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs* (9). The guidelines do not contain nutrition and food service standards that refer to the *Dietary Guidelines for Americans* (16). Previous research by Drake (17) revealed that agencies participating in CACFP do not meet these latter guidelines (16). Since the AAP/APHA guidelines are intended as a supplement to upgrade existing regulations, lack of reference to the *Dietary Guidelines for Americans* is a serious limitation. It is unclear also from this research project how available the AAP/APHA guidelines are to the state and local regulatory and child care agencies.

Future research based on the AAP/APHA guidelines should focus on assessment of the extent to which the nutrition and food service standards outlined are met for children with special needs, particularly with respect to written policies and involvement of a Nutrition Specialist. In addition, assessment of the nutrition knowledge of all child care staff, not just the director, and the number of meals and snacks served during hours of operation are areas that need to be explored.

From this research the most important standards that should be considered for adoption as regulation by the state are those concerning written policies. Analysis of the Written Policies score for this sample indicated that two thirds of respondents did

not require approval by a Nutrition Specialist for changes made in a child's diet. The data presented in this research show that the involvement of the Nutrition Specialist is severely limited with respect to implementation of nutrition policies in child care.

IMPLICATIONS

As the trend of increasing numbers of children requiring out-of-home child care continues, steps need to be taken to ensure quality child care for all children. The AAP and APHA have taken those first steps by developing the *National Health and Safety Performance Standards* (9). Public health and nutrition professionals need to take the next steps by advocating for the incorporation of these standards into existing regulations. This study found that Nutritionists or Dietitians are consulted only occasionally and the primary source of nutrition information is the State Department of Human Services. Therefore, Registered Dietitians at the community level can build partnerships with child care agencies by working through the Department of Human Services.

With the development of the *National Health and Safety Performance Standards* the AAP and the APHA have provided health and child care professionals and policy makers the tool that may, if accepted and applied nationally, guarantee every child in every state quality child care, much like the quality education to which each child in this country is entitled. Nutritionists and Dietitians should take an active role in

shaping child care policies at each level of local, state, and federal government.

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APPENDICES

APPENDIX A



Department of Nutrition
1215 West Cumberland Avenue, Room 229
Knoxville, TN 37996-1900
(615) 974-3445
FAX = (615) 974-3491

Dear Survey Participant:

You have been selected to participate in a research study to assess the nutrition policies and practices in licensed child care agencies in Tennessee. With so many children in day care today, it is important to assure quality care. You were chosen because of your commitment to quality day care for the children of Tennessee. As child care providers your experience and input is essential in establishing policies to ensure the health and safety of children in day care.

In order to participate you need only to complete the enclosed questionnaire and return it in the stamped, self-addressed envelope provided. If the addressee is no longer in this position, please have the individual in this position complete the questionnaire. There are no risks to you as a participant of this study. All questionnaires will be kept confidential and on file in the Department of Nutrition. Only the researchers will have access to a code that matches names of participants with numbers on the return envelopes. The purpose of this coding system is to help maintain confidentiality, yet permit follow-up of unanswered questionnaires. Returned questionnaires will not be matched to the codes or names of participants thus all questionnaires will remain confidential. In no way will the data be presented so that individual participants can be identified. The results of the study will be analyzed and prepared for publication in a professional journal.

Your participation in this study is strictly voluntary, but we encourage you to participate. We respect your input, opinions and experience. If you are unable to participate there will be no penalty to you or your agency.

If you have any questions about the study in general or the questionnaire in particular, please do not hesitate to contact either of us by mail or telephone. We will be very happy to answer any questions you may have.

We hope you will take a few minutes to complete the questionnaire and return it by March 31, 1995. Its return will constitute informed consent to participate in the study.

Thank you for your participation.

Sincerely,

A handwritten signature in black ink that reads 'Nicole Cunningham'.

Nicole Cunningham
Public Health Nutrition Graduate Student
615/689-3930

A handwritten signature in black ink that reads 'Betsy Haughton'.

Betsy Haughton, EdD, RD, LDN
Associate Professor
615/974-6267



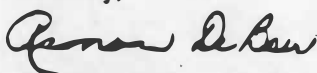
Dear Child Caregiver:

That we are living in and experiencing change in many facets of our lives becomes all too apparent as we read the daily news. However, one fact remains constant: children have basic nutritional needs. Children, from infants to teens must be assured of adequate nutrition to grow to their genetic potential and to ensure their cognitive development. In addition, the meal service becomes the example by which children learn to make healthy food choices that will promote a lifetime of good health. What a challenge!

Your participation in the "Kids First" study will offer researchers another "window" of information to assess how the child caregivers in Tennessee are meeting this challenge.

I encourage you to take a few minutes to complete and return the survey.

Sincerely,



Ramona DeBoer, Nutritionist
Child and Adult Care Food Program




Dear Child Caregiver:

Recently Child Care programs received a lot of press as a result of a National Research Project that focused on quality in early childhood education programs. I feel confident that a majority of programs in Tennessee are good programs offering quality services.

I feel this survey will help identify strengths and weaknesses thus policies can be changed/implemented to ensure quality care. Please take a few minutes and fill this survey out and mail it back to Nicole Cunningham.

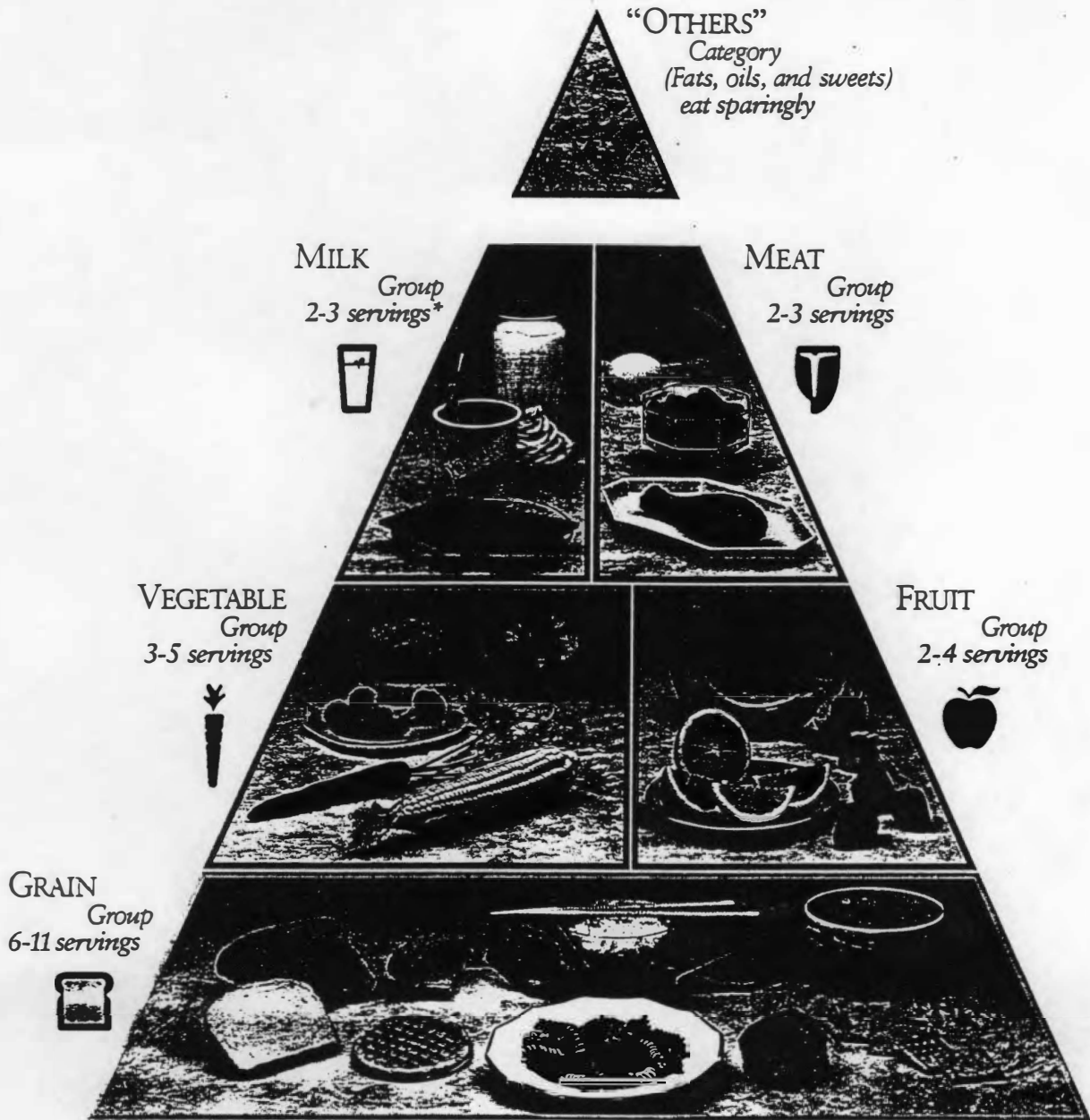
This is an opportunity to tell about the good things we are doing for children. Thank you for taking the time to provide this information.

Sincerely,



Philip A. Acord
President-Tennessee Association for
the Education of Young Children

DAILY FOOD GUIDE PYRAMID



*Preteens, teens, and young adults (age 11 to 24) and pregnant and lactating women need 4 servings from the Milk Group to meet their increased calcium needs.

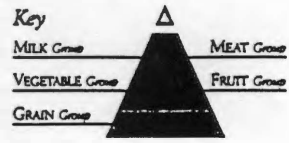
Need more information on serving sizes or the variety of foods in each food group? Ask for a copy of Dairy Council's *GUIDE TO GOOD EATING*.

COMBINATION FOODS ARE NUTRITIOUS

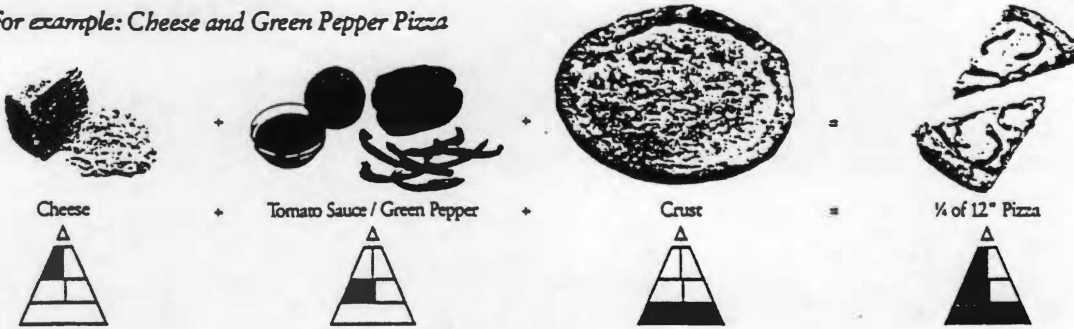
Pizza...
 Lasagna...
 Chicken Stirfry!
 Where do they fit on the Pyramid?

These mixed dishes—"Combination Foods"—are made by combining foods from the Five Food Groups. So, they fit in several parts of the pyramid.

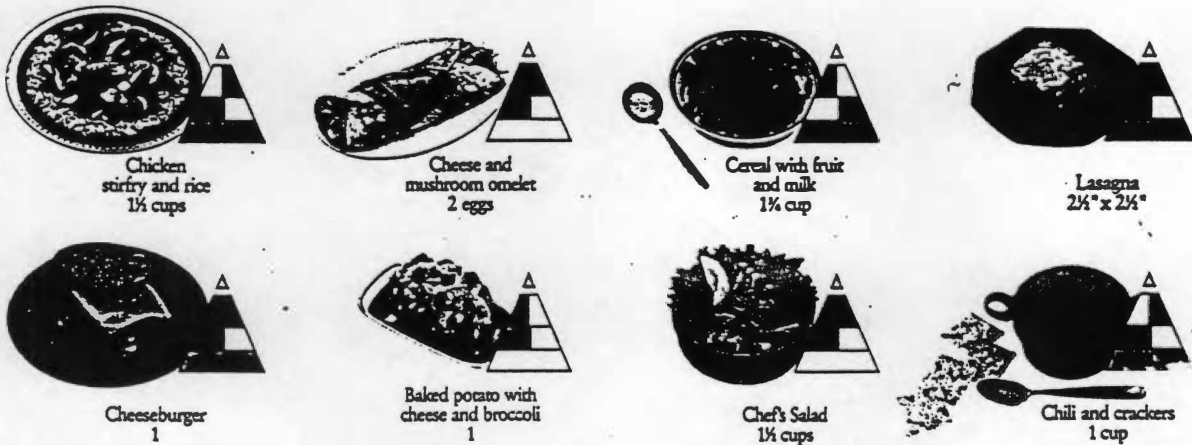
Combinations count as full or partial servings of two or more food groups. So, they help you meet the recommended number of servings listed on the Daily Food Guide Pyramid.



For example: Cheese and Green Pepper Pizza



Serving Sizes of Combination Foods



EAT HEALTHY! EAT THE PYRAMID WAY!



- *Get enough* foods from each food group every day. Use the serving numbers on the front as a guide.
- *Count Combination Foods* as servings or partial servings from the food groups. Combinations can help you meet your daily servings from each food group.
- *Limit* foods from the "Others" Category. These foods are usually high in calories (from sugar and fat) and low in most nutrients. They include:
 - Sweets (cake, pie, candy, cookies, etc.)
 - Chips and other salty snacks
 - Alcohol (wine, wine coolers, beer, etc.)
 - Fats and Oils (salad dressing, mayonnaise, spreads, etc.)
 - Other Beverages (coffee, tea, soft drinks, etc.)





'KIDS FIRST'

**QUALITY NUTRITION AND FOOD SERVICE
IN CHILD DAY CARE**

**Department of Nutrition
College of Human Ecology
University of Tennessee-Knoxville
Knoxville, TN 37996-1900**

This survey is designed to assess the food and nutrition policies and practices of licensed child care agencies in Tennessee. The questionnaire consists of two sections: 1) food and nutrition policies and practices; and 2) demographic. It is important to select only one response for each item unless directed otherwise. Thank you for your participation.



I. Food and Nutrition Policies and Practices Section

Questions 1-13 are general questions about nutrition.

Answer questions 1-9 by placing an 'X' on the line next to your response.

1. Does your agency have a written nutrition plan?

- Don't Know (if Don't Know then go to question 4) (D)
 No (if No then go to question 4) (N)
 Yes (if Yes then go to question 2) (Y)

2. Does the written plan address:

- | Yes(Y) | No(N) | Don't Know (D) | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Kitchen Layout |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Food Procurement, preparation and service |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Staffing |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Nutrition Education |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Menu |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Other (please specify) _____ |

3. Who developed the written plan? ('X' all responses that apply)

- Nutrition Specialist (N)
 Food Service Expert (F)
 Other (please specify) (O) _____

4. Is furniture such as tables and chairs child-sized?

- Yes (Y)
 No (N)
 Don't Know (D)

5. Are eating utensils age-appropriate and child-sized?

- Yes (Y)
 No (N)
 Don't Know (D)

6. Does your agency accept breastmilk in bottles for breastfed infants?

- Yes (Y)
 No (N)
 Don't Know (D)

Questions 7-9 refer to children with special dietary needs such as food allergies:

7. Is written permission required from the parent/legal guardian prior to modifying the child's diet?

- Yes (Y)
 No (N)
 Don't Know (D)

8. Is written list of foods that cause food allergies or foods that are special dietary needs obtained from the parent/legal guardian or the health care provider?

- Yes (Y)
- No (N)
- Don't Know (D)

9. Does a child care Nutrition Specialist approve changes made in a child's diet?

- Yes (Y)
- No (N)
- Don't Know (D)

Answer questions 10-13 by writing your responses on the lines provided.

10. How many children does one adult feed and/or supervise eating at the same time? (answer for each relevant age group)

- Infants Preschoolers
- Toddlers Don't Know

11. How many times are foods rich in iron, such as lean meat, poultry, fish served?

- Times per day
- Times per week (Monday - Friday)
- Don't Know

12. How many times are foods rich in vitamin C, such as oranges, cantaloupe, tangerines served?

- Times per day
- Times per week (Monday - Friday)
- Don't Know

13. How many times are foods rich in vitamin A, such as carrots, apricots, spinach, greens served?

- Times per day
- Times per week (Monday - Friday)
- Don't Know

Answer questions 14-49 by shading in the box corresponding to your response.

EXAMPLE:

Staff eat all meals with the children.
(the shaded box reflects a response of 25% of the time)

14. A nutritious snack is offered to children in the midmorning.

15. A nutritious snack is offered to children in the midafternoon.

	TIME					Don't Know	Not Applicable
	0%	25%	50%	75%	100%		
EXAMPLE: Staff eat all meals with the children. (the shaded box reflects a response of 25% of the time)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. A nutritious snack is offered to children in the midmorning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. A nutritious snack is offered to children in the midafternoon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	TIME					Don't Know	Not Applicable
	0%	25%	50%	75%	100%		
16. Child care staff introduce solid foods to infants between 4 and 6 months of age, with parent's permission.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. The infant's parent/legal guardian is consulted before solid foods are introduced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Young children are allowed to carry bottles throughout the day or night.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Infant formula from powder or concentrate is prepared at the child care site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Water used for the preparation of infant formula is from a source approved by the local Health Department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Cleaned and disinfected baby bottles and nipples are used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Unused refrigerated bottles of formula are discarded after 24 hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Unused refrigerated breastmilk is discarded after 48 hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Unused frozen breastmilk is discarded after 2 weeks.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. After 48 hours, opened containers of refrigerated formula are discarded if not used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Frozen breastmilk is thawed under running water or in the refrigerator.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Bottles of breastmilk or formula are warmed in a microwave oven.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Bottles of breastmilk or formula are warmed in a pan of hot water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Bottles, bottle caps and nipples are washed in a dishwasher or boiled for 5 minutes just prior to filling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Milk is poured directly from the original container into a clean bottle for feeding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	TIME					Don't Know Not Applicable	
	0%	25%	50%	75%	100%		
31. Whole, pasteurized milk for drinking is used for children under 24 months of age who are not on formula or breastmilk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Commercially packaged baby food is served directly from the commercial container.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Food left on plates or in bowls after a meal or feeding is discarded.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Children are served small-sized portions of food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Children are permitted to have one or more additional servings of food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Toddlers are encouraged to hold and drink from a cup.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Children are seated when eating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Caregivers sit at the table and eat with the children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. During mealtime caregivers talk with the children and encourage conversation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Meals are served family style.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. During mealtime children help with mealtime activities like setting and cleaning up the table and serving food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Children are offered the same kinds of foods they eat at home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Children are introduced to foods they have never tried before.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. Adults are allowed to drink hot beverages in child care areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Children's food is served on plates or in bowls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	TIME					Don't Know	Not Applicable
	0%	25%	50%	75%	100%		
46. For children learning to feed themselves, an adult sits at the same table or next to the child's chair to supervise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. For infants, food is served in pieces no larger than 1/4 inch cubes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. For toddlers, food is served in pieces no larger than 1/2 inch cubes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Foods that are round, small or hard (such as peanuts, whole grapes, raisins) are not offered to children under 4 years of age.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

II. Demographic Section

Answer questions 50-54 by placing an 'X' on the line next to your response.

50. Which best describes your child care agency? (place an 'X' on the line)

- Registered Day Care Home (serves 1 to 4 children) (R)
- Family Day Care Home (serves 5 to 7 children) (F)
- Group Day Care Home (serves 8 to 12 children) (G)
- Child Day Care Center (serves 13 or more children) (C)

51. Does your agency participate in the USDA Child and Adult Care Food Program (CACFP)?

- Yes (Y)
- No (N)
- Don't Know (D)

52. Which best describes your child care agency? (place an 'X' on the line)

- Nonprofit (N)
- For profit (P)
- Don't Know (D)

53. Which best describes your job title? (place an 'X' on the line)

- Director (D)
- Assistant Director (A)
- Head Teacher (H)
- Teacher's Aide (T)
- Food Service Worker (F)
- Nutrition Specialist (N)
- Other (please specify) (O) _____

54. Which best describes the population size in the area in which your agency is located? (place an 'X' on the line)

- 100,000 or more (U)
- 2,501 to 99,999 (S)
- 2,500 or less (R)

Answer questions 55-56 by writing your response(s) on the line(s) provided.

55. What age range of children is your agency capable of serving? (fill-in the ages on the lines provided)

- Youngest
- Oldest

56. When was your agency's first full year of operation? (fill-in the year on the line)

19__

57. Please rate your knowledge of nutrition for each of the following: (place an 'X' on the line)

Infants:

- Excellent
- More than satisfactory to meet needs
- Satisfactory to meet needs
- Less than satisfactory to meet needs
- Unsatisfactory to meet needs

Toddlers:

- Excellent
- More than satisfactory to meet needs
- Satisfactory to meet needs
- Less than satisfactory to meet needs
- Unsatisfactory to meet needs

58. Indicate the source(s) of nutrition information used for staff training, nutrition education and meal planning: (place an 'X' on the line(s) provided)

- State Department of Health or Human Services (D)
- United States Department of Agriculture (U)
- Human Resource Agency (H)
- Nutritionist or Dietitian (N)
- Professional Journals (such as Young Children; Early Childhood Today or Pre-K Today) (J)
- Magazines (such as Working Mother, Parents; Woman's Day; Health) (M)
- Other (please specify) (O) _____

59. Please feel free to write any comments or opinions about quality nutrition and food service in child day care in the space below or on the back cover of this survey.

Thank you for your cooperation. As child care professionals your input is vital in establishing policies to ensure the health and safety of our children in day care.

APPENDIX B

SCORING METHODS

A. Performance Score: Based on responses to Q14-Q49. Maximum score if no "Not Applicable" = 180.

Q14-17, 19-26, 28-41, 45-49 : 0% and "don't know" = 1;
25% = 2; 50% = 3; 75% = 4; 100% = 5; and
"Not Applicable" = missing data

Q18, 27, 44: 0% = 5; 25% = 4; 50% = 3; 75% = 2;
100% and "don't know" = 1; and
"Not Applicable" = missing data

Q42, 43: 0% and "don't know" = 1;
{25%, 50%, 75%, 100%} = 5; and
"Not Applicable" = missing data

1. **Snack Time Performance sub-score:** Based on responses to Q14-15. Maximum possible score if no "Not Applicable" = 10.
2. **Infant Feeding Performance sub-score:** Based on responses to Q16-33. Maximum possible score if no "Not Applicable" = 90.
3. **Toddler/Preschooler Feeding Performance sub-score:** Based on responses to Q34-36. Maximum possible score if no "Not Applicable" = 15.
4. **Mealtime Performance sub-score:** Based on responses to Q37-49. Maximum possible score if no "Not Applicable" = 65.

"Not Applicable" responses were treated as missing values. Performance Score and its respective sub-scores were calculated based on only non-missing responses. Therefore, this score and its sub-scores were calculated first by summing responses to each applicable item; then dividing by the maximum possible score for each; and then for ease of understanding, multiplied by 100.

For example: **Toddler/Preschooler Feeding Performance sub-score**
 Agency X responded: Q34- 75%; Q35- 75%; Q36- NA
 Sum of non-missing responses = 8
 Maximum Possible Score = 10
 Sub-score = $8/10 \times 100 = 80$

B. Written Policies Score: Based on sum of responses to Q1-2, 7-9, 11-13. Maximum score = 12.

Q1-2, 7-9: Yes = 1; No and Don't Know = 0

Note: Q2 contains 5 parts. Therefore Q2's maximum value = 5.

Q11-12: If ≥ 1 for times/day, then = 1
 If < 1 for times/day, then = 0
 If ≥ 5 for times/week, then = 1
 If < 5 for times/week, then = 0
 Don't Know = 0

Q13: If ≥ 1 for times/day, then = 1
 If < 1 for times/day, then = 0
 If ≥ 3 for times/week, then = 1
 If < 3 for times/week, then = 0
 Don't Know = 0

Note: Q3 is not included in the calculations for this score since all response options except "other" would be scored as 1.

C. Staff and Environment Score: Based on sum of responses for Q4-5, 10. Maximum score = 5.

Q4-5: Yes = 1; No and Don't Know = 0

Q10: Infant If ≤ 3 , then = 1
 If > 3 , then = 0

Toddler	If ≤ 3 , then = 1
	If > 3 , then = 0
Preschooler	If ≤ 3 , then = 1
	If > 3 , then = 0
	Don't Know = 0

Q50-59 were demographic items. Q6 was not included in calculations of the scores. This item was not a standard developed by the AAP/APHA.

SAMPLE SURVEY SCORING

Performance Score:

6 items marked "Not Applicable"

Maximum Possible Score = 150 (30 items at 5 points each)

Sum of Responses = 114

Score = 76 ($[114/150]*100$)

Snack Time Performance sub-score:

0 items marked "Not Applicable"

Maximum Possible Score = 10 (2*5)

Sum of Responses = 10

Score = 100 ($[10/10]*100$)

Infant Feeding Performance sub-score:

5 items marked "Not Applicable"

Maximum Possible Score = 65 (13*5)

Sum of Responses = 41

Score = 63 ($[41/65]*100$)

Toddler/Preschooler Feeding Performance sub-score:

0 items marked "Not Applicable"

Maximum Possible Score = 15 (3*5)

Sum of Responses = 12

Score = 80 ($[12/15]*100$)

Mealtime Performance sub-score:

1 item marked "Not Applicable"

Maximum Possible Score = 60 (12*5)

Sum of Responses = 51

Score = 85 ($[51/60]*100$)

Written Policies Score:

Maximum Score = 12

Sum of Responses = 10

Staff and Environment Score:

Maximum Score = 5

Sum of Responses = 2

SAMPLE SURVEY*

I. Food and Nutrition Policies and Practices Section

Questions 1-13 are general questions about nutrition.

Answer questions 1-9 by placing an 'X' on the line next to your response.

			<u>Score/Points</u>
1.	Does your agency have a written nutrition plan?		
	<input type="checkbox"/>	Don't Know (if Don't Know then go to question 4) (D)	
	<input type="checkbox"/>	No (if No then go to question 4) (N)	
	<input checked="" type="checkbox"/>	Yes (if Yes then go to question 2) (Y)	1
2.	Does the written plan address:		
	Yes (Y)	No (N) Don't Know (D)	
	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	1
	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	1
	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	1
	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	1
	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
		Other (please specify) _____	
3.	Who developed the written plan? ("X" all responses that apply)		
	<input checked="" type="checkbox"/>	Nutrition Specialist (N)	Not Scored
	<input type="checkbox"/>	Food Service Expert (F)	
	<input type="checkbox"/>	Other (please specify) (O) _____	
4.	Is furniture such as tables and chairs child-sized?		
	<input checked="" type="checkbox"/>	Yes (Y)	1
	<input type="checkbox"/>	No (N)	
	<input type="checkbox"/>	Don't Know (D)	
5.	Are eating utensils age-appropriate and child-sized?		
	<input checked="" type="checkbox"/>	Yes (Y)	1
	<input type="checkbox"/>	No (N)	
	<input type="checkbox"/>	Don't Know (D)	
6.	Does your agency accept breastmilk in bottles for breastfed infants?		
	<input checked="" type="checkbox"/>	Yes (Y)	Not Scored
	<input type="checkbox"/>	No (N)	
	<input type="checkbox"/>	Don't Know (D)	

Questions 7-9 refer to children with special dietary needs such as food allergies:

7.	Is written permission required from the parent/legal guardian prior to modifying the child's diet?		
	<input checked="" type="checkbox"/>	Yes (Y)	1
	<input type="checkbox"/>	No (N)	
	<input type="checkbox"/>	Don't Know (D)	

* See p. 167-70 for calculations of scores and sub-scores.

SCORE POINTS

8. Is written list of foods that cause food allergies or foods that are special dietary needs obtained from the parent/legal guardian or the health care provider? 1
- Yes (Y)
 No (N)
 Don't Know (D)
9. Does a child care Nutrition Specialist approve changes made in a child's diet? 0
- Yes (Y)
 No (N)
 Don't Know (D)

Answer questions 10-13 by writing your responses on the lines provided.

10. How many children does one adult feed and/or supervise eating at the same time? (answer for each relevant age group)
- | | | |
|-------------------|------------------------|----------------|
| <u>4</u> Infants | <u>10</u> Preschoolers | Infants 0 |
| <u>5</u> Toddlers | Don't Know | toddlers 0 |
| | | Preschoolers 0 |
11. How many times are foods rich in iron, such as lean meat, poultry, fish served? 1
- Times per day
5 Times per week (Monday - Friday)
 Don't Know
12. How many times are foods rich in vitamin C, such as oranges, cantaloupe, tangerines served? 0
- Times per day
4 Times per week (Monday - Friday)
 Don't Know
13. How many times are foods rich in vitamin A, such as carrots, apricots, spinach, greens served? 1
- Times per day
5 Times per week (Monday - Friday)
 Don't Know

Answer questions 14-49 by shading in the box corresponding to your response.

	TIME					Don't Know	Not Applicable	POINTS
	0%	25%	50%	75%	100%			
EXAMPLE: Staff eat all meals with the children. (the shaded box reflects a response of 25% of the time)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. A nutritious snack is offered to children in the midmorning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
15. A nutritious snack is offered to children in the midafternoon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5

	TIME					Don't Know	Not Applicable	Points
	0%	25%	50%	75%	100%			
16. Child care staff introduce solid foods to infants between 4 and 6 months of age, with parent's permission.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
17. The infant's parent/legal guardian is consulted before solid foods are introduced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
18. Young children are allowed to carry bottles throughout the day or night.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
19. Infant formula from powder or concentrate is prepared at the child care site.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
20. Water used for the preparation of infant formula is from a source approved by the local Health Department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(-)
21. Cleaned and disinfected baby bottles and nipples are used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
22. Unused refrigerated bottles of formula are discarded after 24 hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
23. Unused refrigerated breastmilk is discarded after 48 hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
24. Unused frozen breastmilk is discarded after 2 weeks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(-)
25. After 48 hours, opened containers of refrigerated formula are discarded if not used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
26. Frozen breastmilk is thawed under running water or in the refrigerator.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(-)
27. Bottles of breastmilk or formula are warmed in a microwave oven.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
28. Bottles of breastmilk or formula are warmed in a pan of hot water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
29. Bottles, bottle caps and nipples are washed in a dishwasher or boiled for 5 minutes just prior to filling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(-)
30. Milk is poured directly from the original container into a clean bottle for feeding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(-)

	TIME					Do Not Know Not Applicable		POINTS
	0%	25%	50%	75%	100%			
31. Whole, pasteurized milk for drinking is used for children under 24 months of age who are not on formula or breastmilk.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
32. Commercially packaged baby food is served directly from the commercial container.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
33. Food left on plates or in bowls after a meal or feeding is discarded.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
34. Children are served small-sized portions of food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
35. Children are permitted to have one or more additional servings of food.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
36. Toddlers are encouraged to hold and drink from a cup.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
37. Children are seated when eating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
38. Caregivers sit at the table and eat with the children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
39. During mealtime caregivers talk with the children and encourage conversation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
40. Meals are served family style.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
41. During mealtime children help with mealtime activities like setting and cleaning up the table and serving food.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
42. Children are offered the same kinds of foods they eat at home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(-)
43. Children are introduced to foods they have never tried before.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
44. Adults are allowed to drink hot beverages in child care areas.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
45. Children's food is served on plates or in bowls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5

	TIME					Don't Know	Not Applicable	POINTS
	0%	25%	50%	75%	100%			
46. For children learning to feed themselves, an adult sits at the same table or next to the child's chair to supervise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
47. For infants, food is served in pieces no larger than 1/4 inch cubes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
48. For toddlers, food is served in pieces no larger than 1/2 inch cubes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
49. Foods that are round, small or hard (such as peanuts, whole grapes, raisins) are not offered to children under 4 years of age.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4

II. Demographic Section

Answer questions 50-54 by placing an 'X' on the line next to your response.

50. Which best describes your child care agency? (place an 'X' on the line)
- Registered Day Care Home (serves 1 to 4 children) (R)
 - Family Day Care Home (serves 5 to 7 children) (F)
 - Group Day Care Home (serves 8 to 12 children) (G)
 - Child Day Care Center (serves 13 or more children) (C)
51. Does your agency participate in the USDA Child and Adult Care Food Program (CACFP)?
- Yes (Y)
 - No (N)
 - Don't Know (D)
52. Which best describes your child care agency? (place an 'X' on the line)
- Nonprofit (N)
 - For profit (P)
 - Don't Know (D)
53. Which best describes your job title? (place an 'X' on the line)
- Director (D)
 - Assistant Director (A)
 - Head Teacher (H)
 - Teacher's Aide (T)
 - Food Service Worker (F)
 - Nutrition Specialist (N)
 - Other (please specify) (O) _____

54. Which best describes the population size in the area in which your agency is located? (place an 'X' on the line)

- 100,000 or more (U)
 2,501 to 99,999 (S)
 2,500 or less (R)

Answer questions 55-56 by writing your response(s) on the line(s) provided.

55. What age range of children is your agency capable of serving? (fill-in the ages on the lines provided)

6 wks Youngest
5 years Oldest

56. When was your agency's first full year of operation? (fill-in the year on the line)

1991

57. Please rate your knowledge of nutrition for each of the following: (place an 'X' on the line)

Infants:

- Excellent
 More than satisfactory to meet needs
 Satisfactory to meet needs
 Less than satisfactory to meet needs
 Unsatisfactory to meet needs

Toddlers:

- Excellent
 More than satisfactory to meet needs
 Satisfactory to meet needs
 Less than satisfactory to meet needs
 Unsatisfactory to meet needs

58. Indicate the source(s) of nutrition information used for staff training, nutrition education and meal planning: (place an 'X' on the line(s) provided)

- State Department of Health or Human Services (D)
 United States Department of Agriculture (U)
 Human Resource Agency (H)
 Nutritionist or Dietitian (N)
 Professional Journals (such as Young Children; Early Childhood Today or Pre-K Today) (J)
 Magazines (such as Working Mother; Parents; Woman's Day; Health) (M)
 Other (please specify) (O) _____

59. Please feel free to write any comments or opinions about quality nutrition and food service in child day care in the space below or on the back cover of this survey.

None

Thank you for your cooperation. As child care professionals your input is vital in establishing policies to ensure the health and safety of our children in day care.

VITA

Nicole Anne Cunningham was born in Malone, New York, on April 2, 1970. She attended elementary school in the Salmon River Central School District and graduated for Salmon River Central (Fort Covington, NY) in June 1988. She received the degree of Bachelor of Science in Food and Nutrition for the State University of New York at Plattsburgh in May 1993. In December of 1995 she received the degree of Master of Science in Nutrition for the University of Tennessee, Knoxville.