

NUTRITIONAL ASPECTS OF INFANT FEEDING AMONG
LOW-SOCIOECONOMIC FAMILIES

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CHAPTER I

INTRODUCTION

Many families today, in this land of plenty, are categorized in the low-income bracket. This group includes many races and many cultures. The present study focused special emphasis on the nutritional status of the infant from families having a low-socioeconomic level. Maslansky et al. (1974) emphasized that a person's health status may be established for life at a very early age.

Early in life the infant begins to associate eating with his relationship, socially, to the person feeding him. Social development is only one of the many aspects related to the nutritional status of the infant. Intellectual, physical, emotional, and psychological development are also important factors influencing the nutritional status of the infant.

Purposes of the Study

The nutritional status of a young child is extremely important to growth and development, both during infancy and throughout the life cycle. Many factors influence the nutritional status of young children, particularly the socioeconomic background of the family. Thus, there is a

need to determine nutritional practices in the homes and the factors that may influence these practices among families having a low-socioeconomic status. With these thoughts in mind, the author investigated the current infant feeding practices and the possible influence of certain family background factors on these practices among families having a low-socioeconomic level. The overall purposes of this study were:

- 1) To investigate infant feeding practices among families having a low-socioeconomic level, residing in Dallas County;
- 2) To ascertain the perception and attitudes of the mothers toward infant nutrition; and
- 3) To determine the possible influence of feeding practices on the nutritional adequacy of the diets of the infants.

Review of Literature

Many research workers have investigated the effects of nutritional status on the growth and development of infants and young children. The effects of methods of feeding the infant and adequacy of the diet have been subjects of considerable interest. The prevalence of malnutrition and its effects on growth and development are of worldwide concern. Since poverty is prevalent in many parts of the world, and economic level has been found to influence nutritional status, there has been a concerted movement to improve infant feeding practices through the

development of nutritional programs for mothers of young children. An effort on the part of industry has increased the nutritional quality of infant foods.

History of Infant Feeding

Lowenberg and Lucas (1976) have reviewed the history of early infant feeding. Pap or panada was the first solids added to a baby's diet. This food consisted of flour, bread, or cereals cooked for hours in water, broth, milk, or beer. The result was a thick viscous substance. Cider was a popular beverage used to replace milk, which was scarce in the New England winters. New England infants were fed cream, skimmed directly from the top of milk. This top milk had a very high fat content, which the infants could not tolerate.

Lowenberg and Lucas (1976) reported that, for the infants who could not be nursed, "raising the child by hand" was attempted. This usually meant giving the child a diet of pap or panada, which was insufficient in nutrients, thus resulting in a high risk of survival. During the early times, many parents gave the child a mixture of butter, sugar, and panada, which was tied in a cloth. This was called "wet nursing" and introduced the child to sucking.

Effects of Nutritional Status
on Growth and Development

Owen et al. (1974) conducted a national study of infants and children of preschool age from low-socio-economic groups. The purpose of the study was to determine nutritional status of the infants and children in order to assist administrators of child health facilities to improve the delivery of nutritional services. The major nutritional problem confronting these children was insufficiency of food. Highlights of the findings on dietary intake were as follows:

- 1) A high percentage of children with ascorbic acid intakes under 15 milligrams was in the lowest income group.
- 2) Supplements contributed substantial amounts of vitamins to total intakes, with percentage increases being greatest for children of lower-socioeconomic status.
- 3) Age, socioeconomic status, and race were important influences on eating patterns.
- 4) Little difference among the lower socio-economic groups in daily intakes of nutrients was found between those who did or those who did not participate in federal food programs.

Read (1973) has stated that nutrition is one of the most pervasive factors influencing the growth, development, and health of children. The author further defined malnutrition as the state of impaired functional ability of development caused by an inadequate intake of essential nutrients or calories to provide for long term needs.

Abrams et al. (1975) reported that there are many hazards associated with the overconcentration of the milk formula, such as renal failure, disseminated intravascular coagulation, gangrene of the legs, and coma. Common offenders in this respect, according to these authors, are boiled skimmed milk, improperly diluted powdered or evaporated milk, and incorrectly prepared electrolyte mixtures. These preparations, when fed to infants, impose a large solute load on a functionally immature kidney, jeopardize the water balance in the infant, and render the infant vulnerable to the development of dehydration and renal failure. The most effective way to avoid the above dangers is to follow closely the instructions concerning measurements located on each container for infant formulas.

The effect of severe malnutrition on growth and development of the infant was emphasized by Read (1973). Severe malnutrition affects development of the brain and nervous system. Read stated that severe malnutrition refers to marasmus or kwashiorkor, each of which results from prolonged protein or caloric restriction in early childhood. While the effects of moderate malnutrition are less obvious, they are not fully understood. Read pointed out that the brain of a malnourished child has fewer cells as compared with the brain of a well nourished child.

Malnourished children have significantly lower Intelligence Quotients at schoolage, and again in adolescence, than do well nourished children.

Hertzizig et al. (1972) investigated the long-term consequences of severe malnutrition during the first two years of life. The study included 74 boys of preschool age, residing in Jamaica. The children who were severely malnourished for the first two years of life, irregardless of whether or not they had been hospitalized for malnutrition, had lower levels of intelligence at school age than their siblings and classmates. There was no association between the degree of intellectual impairment of the boys and the ages at which the children were hospitalized for malnutrition during the first two years of life. These findings demonstrate the relationship between antecedent malnutrition and mental development. However, these investigators recognized that when a child is hospitalized before the age of 6 months for severe malnutrition, there is a better chance for his subsequent intellectual growth.

Hansen, Brown, and Trontell (1976) stated that if the fetus is malnourished, brain growth can be affected. Malnourished babies may have a slower growth rate, have more illnesses, and have limited brain development. A poor maternal diet before or during pregnancy can reduce the

number of cells in the fetus, change enzyme activity, and alter protein content of the brain.

To ensure proper nourishment of the fetus, Blackburn and Calloway (1974) reported that energy allowances of 2,400 calories should be consumed daily by the pregnant woman. Hansen, Brown, and Trontell (1976) reported that pregnant girls between the age of 15 and 19 have dietary intakes below two-thirds of the Recommended Daily Allowances.

Martin (1973) stated that nutrition has psychiatric implications. He described infant feeding as the "cradle of perception." This author pointed out that a newborn baby learns to identify his mother when he is being fed, and at the same time, experiences a change from a state of nonpleasure to a state of pleasure. Another point brought out by Martin was the tendency for brain damaged and/or mentally retarded children to be physically smaller than their peers. The mentally retarded child may experience decreased appetite and psychosocial deprivation. Martin also emphasized that malnourishment has a serious effect on the nervous system of the fetus, which goes on to effect the nervous system of an infant, and continues on into adulthood. The above author pointed out that nutrition is affected by deviations in these areas of life--biological, social, and psychological.

Effects of Nutritional
Status on Childhood Obesity

Interest in childhood obesity has increased for several reasons. Adult obesity is considered a health hazard, and there is suggestive evidence that obese children, as pointed out by Charney et al. (1976), have a strong tendency to become obese adults. Moreover, it is possible that the frustrations of adult obesity may somehow be avoided if some preventive measures are taken in the more malleable climate of early childhood. Rickard and Gresham (1975) stated that overfeeding, resulting in excess calories, may increase the number of fat cells and program the infant for adult obesity. Worthington (1973) reported that 80 percent of all obese children become obese adults.

The American Academy of Pediatrics (1978) has estimated the current rate of obesity in the United States as 25 to 33 percent of the population. The literature is conflicting regarding the effect of formula feeding as opposed to breast feeding on obesity in infants. The obese infant may have an increased risk of becoming an obese child and an obese adult. The academy points out reasons why there may be a better control of caloric intake in breast feeding than in formula feeding. The milk consumption of the breast fed infant is determined by the amount needed to satisfy the infant; whereas, the formula fed infant may be

induced to increase the consumption by a little extra milk that is left in the bottle. Some recent studies indicate that milk samples taken from nursing mothers at the end of the feeding period contained much higher levels of lipid and protein than samples taken at the beginning of the feeding period. This change in composition of the breast milk may satisfy the infant or may in some way signal the infant to cease nursing.

The American Academy of Pediatrics (1978) further points out that the early introduction of solid foods adds greatly to the caloric intake of the infants. A study conducted in England indicated that twice as many bottle fed infants, as breast fed infants, were given solid foods as early as two months of age, a factor which contributes to higher caloric intake.

Swift, Fayers, and Cooper (1977) conducted a study at Farnborough Hospital, Kent. This investigation, including 783 infants observed at six weeks of age and again at six months of age, showed that the bottle fed infants gained more weight than the breast fed infants. The weight of the bottle fed infant at six weeks was 4.85 kilograms, as compared to 4.56 kilograms for the breast fed infant of the same age. The weights, taken again at six months, were 7.91 kilograms for the bottle fed infants as compared to 7.86 kilograms for the breast fed infants.

Effects of Nutritional
Status on Dental Caries

The "bottle-mouth" syndrome, associated with a child sucking a bottle before going to sleep, is a very serious problem. This syndrome may increase the possibility of the child getting dental caries at a very early age. Rabinowitz (1974) stated that, although there is some controversy about the role of milk in this syndrome, it is generally agreed that anything in the bottle other than water will cause tooth decay. Liquids containing sugar (sucrose) are particularly harmful, with apple juice being considered to be the most destructive. Rabinowitz further pointed out that the child who must have a bottle before he/she can go to sleep at night, and who awakes for additional feedings, may very easily qualify for the "bottle-mouth" syndrome. A child's dental problems, just as much as other health, nutritional, and physical factors, can affect his/her behavior. Frequently, when feeding problems are taken care of, a child becomes more relaxed and more interested in preschool activities.

In a recent study of 40 children with dental caries, conducted by Pesaturo (1977) over a two-year period, revealed that the "nursing-mouth" syndrome shows strongly that the sucking of a bottle at bedtime is a problem. The above author also found that a child, while sleeping and

nursing a bottle, pools the liquid around the maxillary anterior teeth with the tongue and the nipple of the bottle. In contrast to this, the liquid is swallowed when the child is awake, thus limiting its contact with the teeth. This lessens the chance for dental caries.

Parents may discover dental problems when they first become concerned about such general behavioral disturbances as their child's restlessness, poor appetite, or crankiness (Rabinowitz, 1974). If a doctor cannot find the cause of the problem, a visit to the dentist is advisable.

Delgado et al. (1975) stated that marginal nutritional status affects adversely various aspects of growth and development during infancy and early childhood. The above authors pointed out that malnutrition may delay dental development, and apparently delays the deciduous dentition.

Patterns of Infant Feeding

Patterns of infant feeding are many and varied. This wide range in feeding patterns may be attributed to the many cultural patterns in our society. The science of infant and child feeding has progressed greatly as modern technology and understanding of child development have shed light on old patterns. However, new problems have appeared. Among these problems are the choice to breast

feed or not to breast feed, how to select from among the many infant formulas available, the age at which baby foods or table foods should be introduced, and whether to purchase commercially prepared infant foods or to prepare infant foods at home.

Breast Feeding Versus Bottle Feeding

There has been much controversy as to which method of feeding the infant, breast feeding or bottle feeding, is best for both the infant and the mother. Aykroyd (1977) stated that human milk is in many ways the perfect food. This author quoted Oliver Wendell Holmes as stating, "The breasts were more skillful as compounding a feeding mixture than the hemispheres of the most learned professor's brain." Among the factors favoring breast feeding are the following: breast milk is healthful, it meets most of the metabolic needs of the baby, it contributes to good growth, and it is clean. This latter factor aids in lowering the risk of intestinal illness and general infection. Furthermore, human milk provides a host of protective factors. Breast fed babies are more resistant to malaria and to infections caused by bacteria or viruses, including the polio virus. In addition, the infants are less likely to suffer from rickets and iron deficiency anemia. Aykroyd further points out that breast milk, unlike many substitute

foods, is easily digestible. Also, the baby generally is receptive to breast milk which is readily available and requires no preparation of any kind.

Although nursing makes physiological demands on the mother with an inadequate diet, breast feeding is in some ways beneficial to the health of the mother. The woman who nurses, usually, does not have a monthly menstrual cycle, thus conserving her iron stores. According to Aykroyd (1977), this is an important consideration for the mother from a low income family. Also, breast feeding reduces greatly the cost of child rearing.

Jelliffe and Jelliffe (1978) stated that human milk has antiallergic properties not present in a cow's milk formula. These properties are very beneficial to the infant. The protein in cow's milk contains an allergen called betalactoglobulin, which some infants cannot tolerate.

Wade (1974) stated that human milk is the ideal food for human infants. It usually fulfills all the child's nutritional needs for the first 4 to 6 months of life. Human milk provides up to three-quarters of the nutrients required by infants aged 6 to 12 months. Human milk is hygienic and cheap. Cow's milk is neither cheap nor hygienic, and requires the added expense of processing. Wade pointed out that the national cost of wasted human milk is formidable. The cost of wasted human milk has been

estimated to be more than three-quarters of a billion dollars. Berg (1977) also emphasized that, when measured by the same yardstick we use for oil, the decline in breast feeding is a waste of a natural resource.

Breast milk can be a major source of nutrition, and the failure to provide breast milk is a major cause of infant malnutrition and mortality according to Berg (1977). The American Academy of Pediatrics (1978) reported a study, comparing the properties of human milk and infant formulas, based on the scientific fact that the milk of each species is well adapted to the needs of that species. The report brought out several important points. Lipids of human milk are better absorbed by infants than those of cow's milk. The butterfat of cow's milk is replaced by vegetable oils in the newer infant formulas to provide better fat absorption; thus, most of the cholesterol, which plays an important role in the early diet of the infant, is removed. Studies with animals suggest that the ingestion of cholesterol during infancy may induce production of enzymes that can subsequently better metabolize cholesterol. This may lead to better cholesterol levels early in life.

Infant formulas have more protein than human milk, providing a margin of safety for the infant. However, the proteins in human milk differ qualitatively from those in cow's milk. The amino acid composition of human milk is

especially suited to the metabolic peculiarities of the newborn infant, particularly the premature infant (American Academy of Pediatrics, 1978).

Research data suggest that 50 percent of the iron in human milk is absorbed; whereas, the iron in pasteurized milk is less well absorbed. The iron content of human milk is low, which may be beneficial because there are two bacteriostatic proteins in human milk--lactoferrin and transferrin--which lose their bacteriostatic properties when saturated with iron. The small amount of lactoferrin in milk used to make infant formulas is denatured during processing and its bacteriostatic properties lost. Jelliffe and Jelliffe (1978) stated that bottle feeding requires a sufficient amount of money to purchase an adequate supply of the formula and to maintain reasonable home hygiene. During the past 30 years the incidence of breast feeding has decreased greatly, with the reasons for the decline being varied. One major reason for the decrease in breast feeding is that many mothers now work outside the home.

The Committee on Nutrition (1976) pointed out that when breast feeding is unsuccessful, inappropriate, or discontinued early, the nutritional needs of an infant during the first year of life may be met by the alternate use of an infant formula. The committee relates that physicians,

nurses, and other health aides encourage negative attitudes about breast feeding to the mother.

Cunningham (1977) stated that the lower morbidity rate in breast fed infants can be associated with the higher socioeconomic status. The health advantages of breast feeding are independent of education levels. The morbidity difference favoring breast milk has been shown to be two to three fold as compared to bottle milk, when fed over a prolonged period of time within the better educated group.

Composition of Bottle Formulas

Fomon (1975) estimated that three products, Similac by Ross, Enfamil by Mead Johnson, and SMA by Wyeth, are vitalized for feeding 96 percent of all infants receiving commercially prepared milk-based formulas. As most commonly fed, 100 milliliters of liquid formula supply the following: 67 kilocalories, 1.5 to 1.6 grams of protein, 3.6 to 3.7 grams of fat, and 7.0 to 7.2 grams of carbohydrate. All of these formulas contain fat-free milk solids, vegetable oils, and added carbohydrates. It has also been estimated that four milk-free formulas, Isomil by Ross, Prosobee by Mead Johnson, Neo-Mull-Soy by Syntex, and Soyabac by Loma Linda, are used for feeding 92 percent of all infants receiving commercially prepared milk-free

formulas. A 100 milliliter portion of one of these liquid formulas supplies 67 kilocalories, 1.8 to 2.6 grams of soy isolate protein, 3.0 to 3.8 grams of fat, and 6.4 to 6.8 grams of carbohydrate. The disparity in proximate composition of the two basic types of formulas shows that the four milk-free formulas are greater in overall nutritional value than the three milk-based formulas.

Rickard and Gresham (1975) have pointed out some clinically significant factors in choosing a formula for the infant. The nutrient adequacy of the diet and the distribution of calories between carbohydrate, protein, and fat are nutritional factors that must be considered.

There are many unanswered questions as to whether iron supplements are effective in the preparation of infant formulas. Rios et al. (1975) concluded that only 1 percent of ferric orthophosphate and sodium iron pyrophosphate is absorbed when supplemented in infant formulas as compared to 2.7 percent of ferrous sulfate used as a supplement.

Contributions of Baby Foods

Choices among the commercially prepared baby foods today are almost unlimited. The wide variations in nutritive content of these products indicate that careful selection of diets for infants and toddlers is necessary to assure proper nutrition.

According to Anderson and Fomon (1971), infant foods come in five categories. These categories are fruit juices, fruits, vegetables, meats and meat dinners, and desserts. The fruit juices contain additional sucrose or dextrose, making the caloric density much higher than juices freshly squeezed in the home. All the fruits have added sugar. Along with the sugar, a form of modified tapioca starch and salt is added. The vegetables are either plain or creamed. The creamed products include whole milk solids, modified corn starch, and sucrose. The plain vegetables have added sucrose. All desserts contain sugar and modified corn or tapioca starch. The only additional ingredient in meats is water. The protein concentration of meat dinners is only half that found in the meats.

Maslansky et al. (1974) found that commercially-prepared foods for infants and children contain less iron than the corresponding home-prepared foods. The above author maintained that most strained and junior meats generally provide less than 1 milligram of iron per 100 gram of food. The combination dinners, the vegetables, and the fruits provide less than 1 milligram of iron per 100 gram of food.

Rios et al. (1975) stated many of the infant cereals today are supplemented with iron to provide a significant

source of dietary iron to meet the high demands of rapidly growing infants. This addition is to ensure against iron deficiency anemia, which is prevalent among many young infants.

Anderson and Fomon (1971) stated that cereals are usually the first "solid" foods given to infants in the United States. In most instances, these cereals are good sources of protein, vitamins, and minerals. The cereals are precooked, dry, and packed in 1-, 8-, and 16-ounce boxes. Rice, mixed cereal grains, high protein cereal, barley, oatmeal, and wheat are among the different varieties of infant cereal on the market today. High protein cereals provide more than five times the protein content of rice cereal and approximately twice that of other varieties of dry cereals. Beech-Nut usually adds brown sugar to most cereals. Gerber adds granulated sugar to only the high-protein cereal. All manufacturers fortify dry cereals with calcium, phosphorus, iron, thiamin, and niacin. Wet-packed cereal-fruit combinations are available to the consumer in 4 3/4 ounce jars. The wet-packed cereal comes in seven varieties--rice/bananas, rice/applesauce, high-protein/strawberries, mixed/bananas, mixed/applesauce, oatmeal/bananas, and oatmeal/applesauce.

DeVizia et al. (1975) pointed out that many infant foods have added starch, and that the digestion of starch

by infants is very slow. After the first year of life, the infants may be able to digest starches. Wheat starch has been found to be more readily digested as compared to potato starch. Cooked rice starch can be tolerated during the second month of life.

Contributions of Nutritional Programs

Recommendations from the panel of the White House Conference on Food, Nutrition, and Health, Final Report (1972) were made in order to take necessary steps to expand basic support in the development of child health. One of the areas of recommendation for further study was an evaluation of the effectiveness of various methods for providing nutrition, health care, and education. As a result of this meeting, recommendations on policies and practices in feeding infants and young children, and proposals for action to implement them, have been developed.

Foreman (1978), Assistant Secretary for Food and Consumer Services of the U.S. Department of Agriculture, in an address to the Food and Nutrition Board of the National Academy of Sciences, National Research Council, stated that the Women, Infants, and Children Program (WIC) has perhaps an outstanding capacity to use good nutrition to improve health and to assist in breaking the cycle of poor childhood development that is often associated with

poor nutrition. The WIC program operates through health care programs and integrates health care, nutrition education, and food assistance. It has been shown to result in substantially increased numbers of visits to prenatal and neonatal health clinics, as well as in the increased consumption of the nutritious foods during the period of critical growth.

The Women, Infants, and Children Program is an example of what can be done when research is applied to real people. This is true both for ways that affect them today--food assistance--and for ways that influence the future--education. The results can mean improved health for all, and for children, an overall improvement in physical and mental development.

Lackey (1978) reported an international symposium on infant and child feeding held at Michigan State University. One speaker pointed out the limited information about the management of lactation on the part of health professionals and the lack of interaction between mothers and the health professionals. One of the US/AID policies developed was "to educate and/or sensitize health professionals at all levels; train staff to operate programs, to incorporate material into on-going training, and to conduct in-service education."

Goldsmith (1973) stated that it is necessary to implement a national program of nutrition, since severe malnutrition is prevalent among various segments of the American population. The above author mentioned some proposals of the White House Conference on Food and Nutrition. One recommendation was that programs for delivery of health and nutrition services be provided in areas of need, and that nutrition centers of excellence be established in various parts of the nation for research, training, and diagnostic consultation. Another recommendation was that the federal government provide substantially increased funds for educating and training dietetic and public health nutrition personnel and for instituting programs in medicine and human nutrition among graduate schools of public health, medicine, allied health, dentistry, nursing, and home economics.

Goldsmith (1973) reported that after the completion of the Ten-State Nutrition Survey, a nutrition program was established in the Center for Disease Control in Atlanta. The data collected were used to initiate a modest applied nutrition program. The objectives of this program were to evaluate the nutritional status of the population of the entire United States and to monitor changes in nutritional status in various segments of the population. Goldsmith emphasized the need for a national policy on nutrition and

a coordination of all branches of the federal government involved in nutrition activities. A national policy on nutrition should include encouragement and support of both basic and applied research, the training of professionals, the education of the public, and provision of services in nutrition for all needy individuals.

Effects of Economic and Social Factors

Data collected by Driskell and Price (1974) showed the importance of adequate nutrition in promoting normal growth and development in children of preschool age. This study included 20 girls and 20 boys from low-income families who were brought by their parents to the City County Clinics in Montgomery, Alabama. A total of 13 percent of the children had hemoglobin values that were below the acceptable levels, and 28 percent had hematocrit levels that were below the acceptable level. The four-year-olds did not meet the recommended allowances for calories, calcium, and iron. Many of the children consumed very little milk, with carbonated drinks, lemonade, and Kool-Aid being the predominate beverages. Snacks consisted mainly of doughnuts, candy, and sweetened beverages, which helped to contribute to the poor nutritional intakes. More of the ascorbic acid intakes came from fruits and fruit juices than from vegetables.

McKenzie (1974) stated that economic and social status have a great impact on food choices. Criteria which influence food selection, as listed by the author, were as follows: an aid to security, a substitute for maternal creativity, a means of demonstrating group acceptance, a reflection of mood and personality, and a compensation for denial during times of crisis. The impact of poverty, income, social status, and short-term crisis on food choices was mentioned by the above author. All of these play a role in the development of food habits.

Bender (1974) stated that in the western world, the schools and the general health services make a contribution to the nutritional status of the young. Low-educational status of the parents, family size, the influence of socioeconomic status, and various environmental factors hinder the child from receiving adequate nutrition.

Owen et al. (1974) conducted a study of preschool children from low-socioeconomic groups, with the results showing evidence of "nutritional risk" as a result of a low dietary intake, low biochemical indexes, and small physical size for age. A large percentage of these children showed an ascorbic acid intake of under 15 milligrams per day. Protein intake seemed to be adequate and varied little with age, race, or socioeconomic status. Data collected from

the various studies have shown that economic and social factors play an important role in the nutritional status of the infant.

CHAPTER II

PLAN OF PROCEDURE

The purposes of this study were to investigate present infant feeding practices, to ascertain the perceptions and attitudes of parents in families from a low-socioeconomic level toward infant nutrition, and to assess the nutritional adequacy of the diets of the infants residing in these families.

This study was limited to infants ranging in age from 12 to 24 months. These children were from families having a low-socioeconomic background, with one or more children enrolled in a Dallas Parent Child Center in the Spring of 1979. The center had a total enrollment of approximately 85 children, ranging in age from six months to five years. The present study included 35 infants, 20 males, and 15 females, in the age range of 12 to 24 months.

A questionnaire was developed to collect the data. This instrument consisted of two parts. Part One consisted of information pertaining to family background. Part Two was utilized to assess information on infant feeding practices. Twenty-one questions were included in

this portion of the study. Permission to conduct this study, using the infants enrolled in the Dallas Parent Child Center, was obtained from two sources, the Project Director of the Day Care Center, and the parents of the infants.

The parents of these infants participated on a voluntary basis only. The mothers completed the questionnaires under the direction of the Health Science Director of the Dallas Parent Child Center. She explained the purposes of the study and provided assistance when needed to answer any questions. The names of the participating mothers were not recorded on the survey forms. The participants were informed that their names would not be used in any way.

In order to determine the feeding practices for the infants, the survey form contained questions about family eating habits which are closely related to the infant feeding practices. The investigator assumed that the table foods eaten by the family were the foods most commonly fed to the infant at a very early age. The survey forms were usually distributed in the afternoon as the parents reported to the Dallas Parent Child Center to pick up their infants or older children.

In order to determine the nutritional adequacy of the foods given to the infants, certain questions pertaining

to a list of foods from the Basic Four Food Groups were included in the questionnaire. Since all parents do not introduce certain foods or eating utensils at the same age, the questionnaire solicited information regarding these factors. In addition, space was provided on the questionnaire for the parent to list any items which she considered to be a feeding problem.

The data were analyzed, using numerals and percentages to determine differences in infant feeding practices. A copy of the questionnaire is listed in Appendix A. Appendix B contains a copy of the written approval form signed by the parent and a copy of the approval form given by the Project Director of the Dallas Parent Child Center.

CHAPTER III

PRESENTATION OF DATA

This study was undertaken to determine the feeding practices of infants from low-socioeconomic families having one or more children enrolled in a Dallas child care center. A total of 27 mothers completed the questionnaire. The mothers had a total of 35 infants, 20 males and 15 females, between the ages of 12 to 24 months. The questionnaire was composed of two parts. Part One solicited information concerning family background. Part Two solicited information concerning infant feeding practices.

Family Background Information

A total of 27 families were represented in this study. The families included 27 mothers and 19 fathers. The information on family background included such items as family composition; age and number of children of pre-school age; number of adult males and females; number of male and female infants; educational attainment of the parents; employment status of the mother; factors influencing food purchases, family meal patterns, and the kind of food items included in the family's diet.

The 27 families had a total of 79 children, 41 males and 38 females. Of this group, 35 children were of preschool age and 44 children were of school age (see Table 1). The study was concerned only with the children who were 12 to 24 months of age.

TABLE 1
COMPOSITION OF TWENTY-SEVEN HOUSEHOLDS
REPRESENTED IN THE STUDY

Family Members	Households
	No.
Adults	
Male	19
Female	27
Children	
Male	41
Female	38
Preschool Children (12 to 24 months)	35
Male	20
12 to 15 months	5
16 to 19 months	10
20 to 24 months	5
Female	15
12 to 15 months	5
16 to 19 months	2
20 to 24 months	8

The educational level of the parents was reported. A high percentage of the parents, 33.3 percent of the women and 42.1 percent of the men, had an eighth grade education or less. Of the total group, 25 had attended high school, but only 14 had graduated, 10 women and 4 men (Table 2). Two individuals, both women, had attended college, but none had obtained a college degree. Two women and two men had attended a trade school. Both of the women had taken business courses, and the men had learned a skilled trade.

TABLE 2
EDUCATIONAL LEVELS OF ADULT MEMBERS OF
TWENTY-SEVEN HOUSEHOLDS

Educational Level	Adult Members			
	Females (N=27)		Males (N=19)	
	No.	%	No.	%
Elementary school 8th grade or less	9	33.3	8	42.1
Attended high school, but did not graduate	6	22.2	5	26.3
Graduated from high school	8	29.6	4	21.1
Attended college, but did not graduate	2	7.4	0	0.0
Obtained a college degree	0	0.0	0	0.0
Trade school	2	7.4	2	10.5

The employment status of the mothers was investigated. Six mothers were employed full-time and five were employed part-time outside the home. The type of employment was not investigated.

The factors which influenced the family's food purchases were varied. A high percentage, 51.9 percent, indicated cost of food as the item having the greatest influence on food purchases (Table 3). Nutritional knowledge and family likes and dislikes were each rated as of much importance by 44.4 percent of the participants. A total of 22.2 percent checked grocery store advertisements as of much importance. This response is not surprising, in view of the fact that cost of food was rated as of most importance by the majority of the group.

Among the items checked as of some importance in the purchases of food, magazine advertisements were checked by 48.1 percent, grocery store advertisements by 44.4 percent, newspaper advertisements by 40.7 percent, and television commercials by 37.0 percent. One-third of the group considered nutritional knowledge as of some importance.

Opinions of friends were considered of little importance by 70.4 percent of this group of mothers. Both television advertisements and magazine advertisements were considered of little importance by 51.9 percent of the

group. Considering the fact that cost of food was rated as of much importance by over half of the group, it is surprising to find that 48.1 percent considered newspaper advertisements as of little importance. It may be that this group of mothers do not have access to a newspaper. Since cost of food was of much importance to 51.9 percent of the families, while grocery store advertisements were of little importance to 29.6 percent, and newspaper advertisements to 48.1 percent of the group, this response is not surprising.

TABLE 3

DEGREE OF INFLUENCE OF CERTAIN FACTORS ON THE FAMILY'S
FOOD PURCHASES IN TWENTY-SEVEN HOUSEHOLDS

Factors	Degree of Importance					
	Little		Some		Much	
	No.	%	No.	%	No.	%
Television commercials	14	51.9	10	37.0	3	11.1
Cost of food	6	22.2	7	25.9	14	51.9
Magazine advertisements	14	51.9	13	48.1	0	0.0
Newspaper advertisements	13	48.1	11	40.7	2	7.0
Grocery store advertisements	8	29.6	12	44.4	6	22.2
Likes and dislikes of family members	9	33.3	6	22.2	12	44.4
Opinions of friends	19	70.4	4	14.8	0	0.0
Nutritional knowledge	5	18.5	9	33.3	12	44.4

The majority, 88.9 percent of the families, ate dinner together during the week. Some of the families checked more than one response concerning dinner. Nine families sat down and ate breakfast together on weekends. Eight families sat down and ate breakfast together during the week (Table 4).

TABLE 4

MEALS AT WHICH FAMILIES SAT DOWN AND ATE TOGETHER
AS REPORTED BY TWENTY-SEVEN MOTHERS

Meal	Time Period	Households	
		No.	%
Breakfast	During Week	8	29.6
	Weekends	9	33.3
	Occasionally	4	14.8
	Seldom	1	3.7
Lunch	During Week	5	18.5
	Weekends	13	48.2
	Occasionally	0	0.0
	Seldom	3	11.1
Dinner	During Week	24	88.9
	Weekends	6	22.2
	Occasionally	2	7.4
	Seldom	1	3.7

In order to determine the nutritional adequacy of the diets of the 27 households, the investigator prepared a list of foods included in the Basic Four Food Groups. These foods were to be checked as to frequency of inclusion in the

diet. This food guide includes at least two servings of milk or milk products; two servings of meat or a meat substitute; four servings of fruits and vegetables, including one serving of a green or yellow vegetable, and a good source of ascorbic acid; and four servings of enriched or whole grain cereal or bread daily.

Table 5 shows the daily consumption of the Basic Four Food Groups by the family members, as checked by the 27 mothers. The data indicate that 40.7 percent of the families had nutritionally adequate amounts of bread. Table 5 also shows that 11 of the 27 households consumed bread at each meal. Eight families ate bread at least once a day, six served bread 2 to 3 times a week, whereas two families ate bread only occasionally.

For the milk group, 51.9 percent of the families had nutritionally adequate intakes. Milk was consumed, as a beverage, at each meal by this group, which means at least 3 servings per day. Milk, as a beverage, was consumed at least once a day by 29.6 percent of the households. The consumption of milk 2 to 3 times per week was checked by 14.8 percent of the homemakers. Only one mother said the family consumed milk occasionally.

Some type of meat was consumed by 40.7 percent of the families at each meal, and by 51.9 percent of the families at least once a day, which indicated adequacy of

TABLE 5

FREQUENCY WITH WHICH BASIC FOOD ITEMS WERE INCLUDED IN THE
DIETS OF TWENTY-SEVEN HOUSEHOLDS

Food Items	Each Meal		At Least Once a Day		Two to Three Times per Week		Occasionally		Never	
	No.	%	No.	%	No.	%	No.	%	No.	%
Bread	11	40.7	8	29.6	6	22.2	2	7.4	0	0.0
Milk as a beverage	14	51.9	8	29.6	4	14.8	1	3.7	0	0.0
Meat (any type)	11	40.7	14	51.9	2	7.4	0	0.0	0	0.0
Beef	7	25.9	4	14.8	11	40.7	4	14.8	0	0.0
Pork	3	11.1	6	22.2	5	18.5	10	37.0	3	11.1
Poultry	2	7.4	5	18.5	14	51.9	5	18.5	0	0.0
Fish	2	7.4	5	18.5	3	11.1	14	51.9	3	11.1
Fruits										
Canned	5	18.5	2	7.4	9	33.3	8	29.6	1	3.7
Fresh	2	7.4	6	22.2	9	33.3	8	29.6	0	0.0
Frozen	0	0.0	4	14.8	1	3.7	5	18.5	15	55.6
Citrus juice	3	11.1	7	25.9	13	48.2	0	0.0	2	7.4

TABLE 5--Continued

Food Items	Each Meal		At Least Once a Day		Two to Three Times per Week		Occasionally		Never	
	No.	%	No.	%	No.	%	No.	%	No.	%
Vegetables										
Green/leafy	3	11.1	7	25.9	8	29.6	5	18.5	0	0.0
Green/yellow	5	18.5	2	7.4	14	51.9	1	3.7	1	3.7
Potatoes	5	18.5	4	14.8	13	48.2	0	0.0	1	3.7
Others	1	3.7	6	22.2	6	22.2	5	18.5	0	0.0
Desserts										
Puddings	0	0.0	0	0.0	5	18.5	15	55.6	7	25.9
Pies	1	3.7	1	3.7	4	14.8	10	37.0	9	33.3
Cakes	1	3.7	0	0.0	4	14.8	12	44.5	6	22.2
Ice Cream	2	7.4	0	0.0	9	33.3	8	29.6	4	14.8
Cookies	1	3.7	5	18.5	11	40.7	4	14.8	2	7.4

the meat group for these families. The consumption of beef was higher than that of pork. Consumption of fish and poultry tended to be either occasional or 2 to 3 times per week for the majority of the families. Although these were low income families, meat was apparently considered an important food item in the family's diet.

The data indicated that only a very small percentage of the diets were adequate for fruits for this group of families (Table 5). Approximately one-fifth of the families, 18.5 percent, reported consuming canned fruit each meal. Fresh fruit was consumed once a day by 22.2 percent of the families. One-third had canned fruit 2 to 3 times per week, and one-third had fresh fruit 2 to 3 times per week. Approximately one-fourth of the households served citrus juices at least once a day, but 48.2 percent served citrus juices only 2 to 3 times per week. Over one-half of the families reported never serving frozen fruits in the diet; while approximately one-fifth served frozen fruits occasionally. This may be due to the fact that frozen fruits are an expensive item in the budget.

The intake of vegetables was as equally deficient as the intake of the fruits. Green leafy vegetables were consumed by 11.1 percent of the families at each meal. The investigator assumed that the families did not include vegetables in the breakfast meal and were reporting each

meal as the lunch and dinner meals. This assumption was made because Table 4 revealed that only 8 families sat down and ate breakfast together during the week, 9 families sat down and ate breakfast together on weekends, 4 occasionally ate breakfast together, and 1 family seldom ate breakfast together. Green or yellow vegetables were consumed by 18.5 percent of the families at each meal. Again, the investigator assumed that the mothers were referring to the lunch and dinner meals since these items are not usually eaten at the breakfast meal. Over one-half the families consumed green or yellow vegetables 2 to 3 times per week, and 29.6 percent consumed green leafy vegetables 2 to 3 times per week. Potatoes were eaten at least 2 to 3 times per week by 48.2 percent of the families; whereas, 33.3 percent ate potatoes either daily or at each meal.

In addition to the adequacy of the basic food groups in the diet, the intake of desserts was also investigated. The majority of the families reported an infrequent consumption of desserts. Occasional consumption was the category most frequently checked, being checked by 55.6 percent for puddings, by 44.5 percent for cakes, by 37.0 percent for pies, by 29.6 percent for ice cream, and by 14.8 percent for cookies. The data indicated that cookies were the most popular dessert item. Cookies were

eaten 2 to 3 times per week by 40.7 percent of the families. Ice cream was eaten 2 to 3 times per week by 33.3 percent of the families. Both pies and cakes were reported as eaten 2 to 3 times per week by 14.8 percent of the families.

These data revealed that the family diets were inadequate in the basic foods. The consumption of milk, meat, and bread tended to be more adequate than that of fruits or vegetables. There is a definite need to help the low income families select and prepare nutritionally adequate meals which fit the family budget.

Infant Feeding Practices

The common feeding practices utilized in feeding the infants were investigated. Eight of the mothers listed the personnel of the Dallas Parent Child Center as the person(s) who fed the child while the mother was away. One mother said all members of the family were responsible for feeding the child. The child's aunt was given by one participant as the individual responsible for feeding the child. One mother indicated the child's older sister was the person who was given the feeding responsible of the child.

The mothers reported whether or not a feeding schedule was used for their infants. Feeding the baby on a regular basis was reported by 55.6 percent of the mothers.

An irregular feeding pattern was reported by 44.4 percent of the mothers. The 55.6 percent of the respondents who fed their child on a regular basis reported the feeding schedule as every two hours. When the child was hungry was the basis for feeding the child as reported by 18.5 percent of those who indicated feeding the child on a regular basis. When the child cried was listed by 18.5 percent of the mothers as an indication for feeding. One participant said the child was fed three meals per day. Another mother reported the child was fed whenever the parents ate.

The age at which the Basic Four Food Groups were introduced into the diet of the infant was reported by the 27 mothers. Fruit juices were reported as generally purchased already prepared. At the age of 1 to 3 months the first fruit juices were introduced to the infant by 42.9 percent of the mothers (Table 6). At the age of 4 to 6 months, the first fruit juices were reported as given by 28.6 percent of the mothers. Fruit juices were first introduced to the 7-to-9-month-old infant by 22.9 percent of the mothers. Two mothers did not respond to this question.

Cereal, which is usually one of the infant's first foods, was introduced into the diets of 51.4 percent of the infants by the age of 2 to 4 months. Over one-fifth, 22.9 percent of the infants, were given their first cereal at the age of 5 to 6 months, 17.2 percent at the age of

TABLE 6

AGE AT WHICH THE BASIC FOOD GROUPS WERE INTRODUCED INTO
THE DIETS OF THIRTY-FIVE INFANTS

Food Item	Age of Infant	Form of Food					
		Ready Prepared		Home-Prepared		Both Forms	
		No.	%	No.	%	No.	%
Fruit juices	1 to 3 months	15	42.9				
	4 to 6 months	10	28.6				
	7 to 9 months	8	22.9				
	No reply	2	5.7				
Cereal	1 month or less	6	17.2				
	2 to 4 months	18	51.4				
	5 to 6 months	8	22.9				
	7 to 9 months	3	8.6				
Vegetables							
strained	3 to 5 months	5	14.3				
	6 to 7 months	10	28.6				
	8 to 10 months	15	42.9	5	14.3		
chopped	8 to 10 months	9	25.7				
	11 to 13 months	15	42.9			6	17.2
	14 to 16 months	0	0.0	5	14.3		

TABLE 6--Continued

Food Item	Age of Infant	Form of Food					
		Ready Prepared		Home-Prepared		Both Forms	
		No.	%	No.	%	No.	%
Fruits							
strained	3 to 5 months	5	14.3				
	6 to 7 months	10	28.6				
	8 to 10 months	15	42.9	5	14.3		
chopped	8 to 10 months	9	25.7				
	11 to 13 months	15	42.9			6	17.2
	14 to 16 months	0	0.0	5	14.3		
Meats							
	7 to 9 months						
	10 to 12 months						
	13 to 15 months	6	17.2				
Mixed dinners							
	6 to 8 months	1	2.9				
	10 to 12 months	2	5.7	6	17.2	3	8.6
	Not Offered	23	65.7				
Junior foods							
	8 to 10 months	1	2.9				
	11 to 13 months	2	5.7	6	17.2	3	8.6
	Not Offered	23	65.7				
Toddler foods							
	8 to 10 months	1	2.9				
	11 to 12 months	1	2.9				
	24 months and over	2	5.7				
	Not offered	31	88.6				

TABLE 6--Continued

Food Item	Age of Infant	Form of Food					
		Ready Prepared		Home-Prepared		Both Forms	
		No.	%	No.	%	No.	%
Table foods	1 month or less			1	2.9		
	2 to 3 months			5	14.3		
	4 to 6 months			1	2.9		
	7 to 9 months			4	11.4		
	10 to 12 months			10	28.6		
	13 to 15 months			10	28.6		
	16 to 18 months			10	28.6		

one month or less, and only 8.6 percent at the late age of 7 to 9 months (Table 6).

Strained vegetables were introduced into the diets of the infants a little later than was cereal, which is usually a common practice. The majority of the mothers reported strained vegetables were purchased in a prepared form. Only 14.3 percent of the infants were given strained vegetables prepared in the home, and these were first introduced at the age of 8 to 10 months. The strained vegetables, purchased in a prepared form, were first introduced to 14.3 percent of the infants at the age of 3 to 5 months, to 28.6 percent of the infants at age 6 to 7 months, and to 42.9 percent of the infants at age 8 to 10 months. The majority, 57.2 percent of the infants, were given their first strained vegetables at 8 to 10 months of age, which seems to be a little late for the introduction of these basic foods.

Chopped vegetables, which are usually introduced into the diets of infants at a later date, or following the introduction of strained vegetables, were given ready-prepared to 68.6 percent of the infants between the ages of 8 to 13 months. Chopped vegetables, prepared in the home, were introduced to 14.3 percent of the infants at 14 to 16 months of age. Chopped vegetables, both ready-prepared and home-prepared, were introduced to 17.2 percent

of the infants by the age of 11 to 13 months. Vegetables prepared in the home, either strained or chopped, tended to be introduced at a later date than were the forms purchased already prepared.

Strained fruits were introduced into the diets of the infants at approximately the same age levels as were vegetables. Fruits and vegetables tended to be purchased in the prepared forms. The data indicated that the mothers introduced both strained fruits and strained vegetables at the same age level.

Meats were not introduced to 17.2 percent of the infants until the age of 13 to 15 months. The data reveal that meat was not given to infants under 12 months of age. All meats given to infants were reported as purchased already prepared.

Mixed dinners were not frequently included in the diets of these infants. Mixed dinners were never served to the majority of the infants, 65.7 percent. One mother introduced mixed dinners to her infant at the age of 6 to 8 months, and two mothers offered mixed dinners to the infant at 10 to 12 months of age. A small percentage, 17.2 percent, introduced mixed dinners, prepared at home, to the infant at age 10 to 12 months. Only three mothers offered both ready-prepared mixed dinners and those prepared in the home to the infants.

Junior foods were introduced into the diets of the 8-to 10-month-old infant by one mother, and into the diets of the 11- to 13-month-old infants by 11 mothers. Of this group, six mothers prepared the junior foods at home, and three mothers used both home-prepared and ready-prepared junior foods.

All the toddler foods introduced into the diets of the infants were purchased ready-prepared. The majority, 88.6 percent of the infants, were not offered toddler foods. One mother introduced toddler foods at the age 8 to 10 months, and one mother at the age of 11 to 12 months. Two mothers reported introducing toddler foods after the infant was 24 months of age.

Table foods seemed to be highly favored over the mixed dinners, junior foods, and toddler foods (Table 6). Infants were introduced to table foods as early as one month of age or as late as 18 months of age. However, only one mother introduced table foods to an infant as young as one month of age. Five mothers introduced table foods to the infant at age 2 to 3 months, and four mothers at age 7 to 9 months. The majority of the mothers introduced table foods between the age of 10 to 18 months. Table foods were offered by equal percentages of mothers (28.6 percent) at 10 to 12 months, 13 to 15 months, and 16 to 18 months (Table 6).

The mothers were asked to give the method they used in early feeding of their infants. Only 17.1 percent of the infants were breast fed. The majority of the infants, 65.7 percent, were bottle fed. For each of the following age levels, one mother stopped breast feeding her infant-- 1 to 2 months, 3 to 4 months, 5 to 6 months, and 9 to 10 months. Only two mothers continued breast feeding their infants at age 11 to 12 months (Table 7).

TABLE 7

REPORTED METHOD USED IN FEEDING THIRTY-FIVE
INFANTS AGED TWELVE TO TWENTY-FOUR MONTHS

Method of Feeding	Infants	
	No.	%
Breast-Fed	6	17.1
1-2 months	1	3.0
3-4 months	1	3.0
5-6 months	1	3.0
7-8 months	0	0.0
9-10 months	1	3.0
11-12 months	2	6.0
Bottle-Fed	23	65.7
4-6 months	1	3.0
7-9 months	2	6.0
10-12 months	13	37.1
13-15 months	1	3.0
16-18 months	3	9.0
19-21 months	1	3.0
22-24 months	2	6.0
Both Methods	3	9.0

The highest percentage of the mothers who totally bottle fed their infants, stopped giving their baby the bottle at age 10 and 12 months, with 37.1 percent reporting this age range. At each of these age levels--4 to 6 months, 13 to 15 months, and 19 to 21 months--one mother discontinued bottle feeding. At the age of 7 to 9 months, two mothers, and at age 22 to 24 months, an additional two mothers reported discontinuing bottle feeding of the infant. Three mothers continued bottle feeding their infants until the age of 16 to 18 months. Three mothers used both methods of feeding their infants, bottle feeding and breast feeding (Table 7).

There are many infant formulas on the market from which to choose. The mothers were asked to check the type of infant formula given to their infant. Similac was the most widely used formula, with 70.4 percent of the mothers choosing this formula. An evaporated milk formula, Enfamil, SMA, and "other," were each listed by two mothers as their choice of an infant formula. No mother reported using a skimmed milk formula or Prosobee, a soy formula, in feeding their infants (Table 8).

A list of the first foods, and the age which these foods were introduced to the infants, are given in Table 9. Cream of Wheat, baked chicken, pinto beans, creamed

potatoes, and cornbread were listed as the first food items fed to the infants. Two mothers fed Cream of Wheat at 1 to 2 months, and two additional mothers at 3 to 4 months. Three mothers introduced Cream of Wheat at age 5 to 6 months, and three mothers at age 17 to 18 months. Cream of Wheat was not introduced by any of the mothers to the infants, 7 to 16 months old.

TABLE 8

CHOICES OF FORMULAS FED TO INFANTS AS REPORTED
BY TWENTY-SEVEN MOTHERS

Formulas	Mothers	
	No.	%
Evaporated Milk	2	7.4
Skimmed Milk	0	0.0
Similac	19	70.4
Advanced Similac	0	0.0
Enfamil	2	7.4
SMA	2	7.4
Prosobee	0	0.0
Other	2	7.4

Baked chicken was reported by only one mother as being first introduced to the infant at age 9 to 10 months

TABLE 9

FIRST TABLE FOOD ITEMS INTRODUCED TO INFANTS AS
REPORTED BY TWENTY-SEVEN MOTHERS

Food Items	Mothers	
	No.	%
Cream of Wheat		
1-2 months	2	7.4
3-4 months	2	7.4
5-6 months	3	11.1
7-8 months	0	0.0
9-10 months	0	0.0
11-12 months	0	0.0
13-14 months	0	0.0
15-16 months	0	0.0
17-18 months	3	11.1
Baked Chicken		
9-10 months	1	3.7
Pinto Beans		
3 weeks	1	3.7
1-2 months	1	3.7
3-4 months	0	0.0
5-6 months	0	0.0
7-8 months	1	3.7
9-10 months	1	3.7
Creamed Potatoes		
7-8 months	3	11.1
9-10 months	0	0.0
11-12 months	2	7.4
Cornbread		
3 weeks	1	3.7

old. Pinto beans was the next most popular first table food. One mother reported giving her infant pinto beans as early as 3 weeks of age. Age 1 to 2 months, 7 to 8 months, and 9 to 10 months were each reported by one mother as the age at which pinto beans were first introduced to the infant. No mother reported introducing pinto beans to the infant 3 to 6 months of age.

Creamed potatoes was the next popular first table food. Three mothers introduced creamed potatoes to their infants at the age of 7 to 8 months. The age level of 11 to 12 months was reported by two mothers as the age at which creamed potatoes were first introduced to their infant as a first table food. Cornbread was reported by only one mother as a first table food, and was reported as offered to a 3-week-old infant (Table 9).

The ages at which feeding instruments were introduced to the infants are shown in Table 10. Three items--an infant feeder, a cup, and a spoon--were the items listed. The infant feeder was not a very popular item, with 88.9 percent of the mothers not choosing to use this manner of feeding. One mother introduced the infant feeder to her child at the age of two months. Two mothers introduced their infants to the infant feeder at the age of five months.

TABLE 10

AGE AT WHICH FEEDING INSTRUMENTS WERE INTRODUCED TO
INFANTS AGED TWELVE TO TWENTY-FOUR MONTHS
AS REPORTED BY TWENTY-SEVEN MOTHERS

Instrument	Mothers	
	No.	%
Infant Feeder		
Not Used	24	88.9
2 months	1	3.7
5 months	2	7.4
Cup		
Uncertain	1	3.7
3-5 months	3	11.1
6-8 months	13	48.1
9-11 months	6	22.2
12-14 months	2	7.4
15-17 months	0	0.0
18-20 months	2	7.4
Spoon		
Uncertain	2	7.4
4 weeks	1	3.7
2-3 months	3	11.1
5-6 months	8	29.6
7-8 months	4	14.8
9-10 months	4	14.8
11-12 months	5	18.5

The cup was a feeding instrument more frequently used. One mother was uncertain of the age at which she first introduced her infant to a cup. A high percentage of the mothers, 48.1 percent, introduced their infants to the cup at the age of 6 to 8 months. Three mothers reported

3 to 5 months as the age at which their infants were introduced to the cup. Age 12 to 14 months and age 18 to 20 months were each listed by two mothers as the age at which they introduced their infant to the cup. Age 15 to 17 months was not reported by any of the mothers as the age at which the cup was first used in feeding their infants.

The spoon was another feeding instrument frequently used. The most popular age level for introducing the spoon to an infant was at 5 to 6 months, with 29.6 percent of the mothers reporting this age level. Two mothers were uncertain of the age at which they introduced their infant to a spoon. Only one mother introduced her infant to the spoon at the age of 2 to 3 months. Age 7 to 8 months and age 9 to 10 months were each reported by four mothers. Five mothers introduced their infants to the spoon at the age of 11 to 12 months (Table 10).

The mothers were asked what they considered to be a healthy child. The importance of a child being active was the most frequent response, being listed by 33.3 percent of the mothers. A fat child was listed by 18.5 percent of the mothers as being an indicator of a healthy child. A good appetite was listed by 14.8 percent of the mothers as an indicator of good health. Three mothers indicated the absence of frequent crying as a sign of good health, and three listed adequate weight as a sign of a healthy child.

Clear eyes, strong limbs, and clean teeth were each listed by one mother as a sign of good health (Table 11).

TABLE 11
FACTORS INDICATING A HEALTHY CHILD AS LISTED
BY TWENTY-SEVEN MOTHERS

Factors	Mothers	
	No.	%
Child is active	9	33.3
Child is fat	5	18.5
Child has a good appetite	4	14.8
Absence of frequent crying	3	11.1
Adequate weight	3	11.1
Clean teeth	1	3.7
Strong limbs	1	3.7
Clear eyes	1	3.7

The mothers were requested to check the source from which they sought information pertaining to their child. The physician was checked by over one-half of the mothers, 66.7 percent. A relative, as a source of information, was checked by 29.6 percent of the mothers. The nutritionist was checked by only four of the mothers. Friends, as a source of information concerning the infant, was checked by only one mother (Table 12).

TABLE 12

SOURCES OF INFORMATION USED BY TWENTY-SEVEN MOTHERS
OF INFANTS, AGED TWELVE TO TWENTY-FOUR MONTHS

Source of Information	Mothers	
	No.	%
Physician	18	66.7
Relative	8	29.6
Nurse	7	25.9
Nutritionist	4	14.8
Friend	1	3.7
Other	1	3.7

Responses as to the methods of introducing the child to new foods and encouraging him/her to eat are shown in Table 13. Giving the child a small amount of food at one time was listed by 37.0 percent of the mothers as a good method of introducing new foods to the infant. Letting the child taste the food and mixing a new food with a well-liked food were each reported by 18.5 percent of the mothers. Four of the mothers considered talking to the child and telling him/her the food was good as important factors in introducing new foods. Three mothers used the method of eating along with the child.

TABLE 13

METHODS OF INTRODUCING NEW FOODS TO THE INFANT AND
WAYS USED TO ENCOURAGE THE CHILD TO EAT, AS
REPORTED BY TWENTY-SEVEN MOTHERS

Method Used	Mothers	
	No.	%
To Introduce New Foods		
Give small amount at one time	10	37.0
Allow child to taste food	5	18.5
Mix new food with well-liked food	5	18.5
Tell the child the food is food	4	14.5
Eat along with child	3	11.1
To Encourage Child to Eat		
Tell child food is good	14	51.9
Eat along with child	5	18.5
Withhold dessert	4	14.5
Mix with favorite food	4	14.5

The method most frequently listed for encouraging the child to eat was that of telling the child that the food was good. Eating along with the child was a method of encouragement used by 18.5 percent of the mothers. Withholding dessert and mixing the new food with a favorite food were methods utilized by each of four mothers.

The majority of the mothers did not prepare any of the baby's food at home. Five mothers reported having a blender. Three mothers prepared beans with the blender. One mother prepared bananas and one mother prepared peas, carrots, and potatoes with the blender. The percentage of mothers who purchased all the baby food ready-prepared was 81.5 percent. Two mothers did not use the blender for preparation of baby foods, but mashed macaroni, peas, and carrots with a spoon or a fork for giving to the baby.

The age of the child when he/she first made an attempt to feed himself/herself was reported by the mothers. The age level of 5 to 6 months was given by 18.5 percent of the mothers as the age at which the child made his/her first attempt at self-feeding. Another age level, 8 to 9 months, was listed by 11.1 percent of the mothers as the age at which the child made his/her first attempt at self-feeding. The age level at which the highest percentage of mothers (37.0 percent) reported the first attempt at self-feeding was 10 to 12 months of age. Only one mother listed the age of 8 months as the age at which the child first made an attempt at self-feeding. The remaining 29.6 percent of the mothers were uncertain of the age in which the child first attempted to feed himself/herself.

The mothers were asked their opinions of the importance of food labels when purchasing baby foods. The labels

were considered of no importance by 59.3 percent of the mothers. These mothers reported not reading any label information. Labels were considered of some importance to 40.7 percent of the mothers. The list of ingredients in the food was considered as being important by 18.5 percent of the mothers. "Everything in general" was the response given by 11.1 percent of the mothers as the information they looked for on the baby food containers. Another 11.1 percent listed the date of expiration as the most important concern when reading labels on baby food containers.

Many of the mothers reported that they encountered problems in feeding their infants. Among the areas listed were the child's dislike of vegetables. Over one-third of the mothers reported that they had a problem in this area. Another area, how to create interest in food, was considered of equal importance. The remaining mothers, 25.9 percent, did not respond to this inquiry. The mothers were requested to list the main areas in which they needed help. How to encourage the child to eat vegetables was the response given by 37.0 percent of the mothers. Over half, 63.0 percent, did not mention an area in which they needed help.

The use of commercially prepared foods or home-prepared foods for infant feeding is a subject of much controversy. Table 6 indicated that only 14.3 percent of

the infants were given home-prepared forms of strained and chopped fruits and vegetables, and only 17.2 percent were given mixed dinners and junior foods prepared in the home. Maslansky et al. (1974) found that commercially prepared foods for infants and children contained less iron than the corresponding home-prepared foods. The above authors maintained that most strained and junior meats generally provide less than 1 milligram of iron per 100 grams of food. The combination dinners, the vegetables, and the fruits provide less than 1 milligram of iron per 100 grams of food. Table 6 also shows that the infants were not introduced to meats until the late age of 13 to 15 months by 17.2 percent of the mothers. It is assumed that the majority, the other 82.8 percent of the mothers, did not give their infants meat because meat was not checked on the survey forms. According to Anderson and Fomon (1971), the commercially prepared fruit juices have additional sucrose, making the caloric density much higher than that of home-prepared juices. The survey revealed that none of the mothers used home-prepared fruit juices for their infants.

According to Aykroyd (1977), human milk is in many ways the perfect food. Only six of the thirty-five infants in the survey were breast fed. Two infants were breast fed until the age of 12 months. Another infant was breast fed until 10 months of age. The majority of the mothers stopped

breast feeding between the ages of 1 to 6 months (Table 7). Aykroyd further points out the breast milk, unlike many substitute foods, is easily digestible. Jelliffe and Jelliffe (1978) state that human milk has antiallergic properties not present in cow's milk. Breast milk can be a major source of nutrition, and the failure to provide breast milk is a major cause of infant malnutrition and mortality according to Berg (1977).

Table 8 revealed that the majority of the mothers (70.4 percent) chose Similac as the formula to use for their infants. This formula choice made by the mothers may be due to the fact that most charity hospitals, which most of the mothers probably used, usually start an infant on this particular formula. Fomon (1975) estimated that three products, Similac by Ross, Enfamil by Mead, and SMA by Wyeth are vitalized for feeding 96 percent of all infants receiving commercially prepared milk-based formulas. Data from the above study showed that those infants who were not breast fed were still fed a nutritionally adequate diet, since a 100 milliliter portion of the above formulas provides the infant with 67 kilocalories, 1.5 to 1.6 grams of protein, 3.6 to 3.7 grams of fat, and 7.0 to 7.2 grams of carbohydrates, which are adequate amounts of these nutrients per serving.

Table 9 revealed that Cream of Wheat was a very popular first food item introduced into the diet of the infant. Anderson and Fomon (1971) stated that cereals are usually the first "solid" foods given to infants in the United States. In most instances, these cereals are good sources of protein, vitamins, and minerals. Ten mothers chose Cream of Wheat for their infants aged 1 month to 18 months. Table 9 also showed that pinto beans and cornbread were given to one infant as early as 3 weeks of age, an age at which none of the authors reviewed, mentioned favorably as a very good first food item.

The mothers were requested to list factors which they considered to indicate a healthy child. Being fat was listed by 5 mothers as an important indicator of good health. Rickard and Gresham (1975) stated that overfeeding, resulting in excess calories, may increase the number of fat cells and program the infant for adult obesity, which may not be desirable over a long period of time. Worthington (1973) reported that 80 percent of all obese children became obese adults. The American Academy of Pediatrics (1978) points out that early introduction of solid foods adds greatly to the caloric intake of the infant. The introduction of pinto beans and cornbread, reported by one mother as fed to a 3-week-old infant, may not have been a very good choice of a first food item.

CHAPTER IV

SUMMARY AND CONCLUSION

The present study was conducted to investigate the practices utilized in feeding infants by families of a low-socioeconomic level, to examine the nutritional adequacy of the diets of these infants, and to determine the areas in which the mothers need help in feeding their infants. The data were obtained at a Dallas child care center. Participation in the study was voluntary. A questionnaire was prepared for use in collecting the data. The questionnaire consisted of two parts. Part One solicited information concerning family background. Part Two solicited information concerning infant feeding practices.

A total of 27 families were reported in this study. The families included 27 mothers and 19 fathers. The 27 families had a total of 79 children, 41 males and 38 females. The study was concerned only with the children who were 12 to 24 months of age.

Approximately two-fifths of the men and one-third of the women had an eighth grade education or less. Over half of the women and slightly less than half of the men had addended high school. Of this group, approximately half had

finished high school. Eleven of the participating mothers were employed, five of these on a part-time basis.

Cost of the food was the factor reported to have the greatest influence on food purchases. Nutritional knowledge and family likes and dislikes were considered of much importance by 44.4 percent of the participants. However, advertisements and television commercials were considered either of some or little importance to the majority of the participants. It may be that this group of mothers did not have access to a newspaper or magazine.

The Basic Four Food Plan was used to determine the nutritional adequacy of both the diets of the infants and the diets of the other family members. Participants checked the frequency of inclusion of each of the basic food groups in the diets of the infants as well as in the diets of the other family members. The categories used for checking were as follows: each meal, at least once a day, 2 to 3 times per week, occasionally, or never. The responses were used as the basis for determining the nutritional adequacy of the diets. The data revealed a significant lack of the inclusion of all food groups in the diets of the family members as well as in the diets of the infants. Less than half, 40.7 percent of the families, had adequate amounts of bread in the diet. The consumption of milk was slightly

better, with 51.9 percent of the families including milk, as a beverage, in the diet at each meal.

Some type of meat was consumed by 40.7 percent of the families at each meal, and by 51.9 percent of the families at least once a day. Beef tended to be consumed more frequently than any other type of meat. Beef was consumed by 25.9 percent of the families at each meal; by 14.8 percent of the families, at least once a day; by 40.7 percent of the families, 2 to 3 times per week; and by 14.8 percent of the families, occasionally. The families did not consume poultry as frequently as beef, but over one-half, 51.9 percent, did consume poultry at least 2 to 3 times per week. Pork was not rated as highly as was beef. However, 11.1 percent of the families had pork on the menu at each meal, and 22.2 percent had pork at least once a day. Fish was not as popular as other meats, being consumed only occasionally by 51.9 percent of the families.

The diets were very insufficient in fruits. Citrus juice was consumed by 25.9 percent of the families at least once a day, and by 48.2 percent of the families 2 to 3 times per week. The inadequate consumption of fruits may be due to the fact that fruits are an expensive item in the food budget.

The intake of vegetables was as equally deficient as the intake of fruits. Green leafy vegetables were

consumed by 11.1 percent of the families at each meal; by 25.9 percent of the families, at least once a day; by 29.6 percent of the families, 2 to 3 times per week; and by 18.5 percent of the families, occasionally. Green and yellow vegetables were included in the diets of 51.9 percent of the families 2 to 3 times per week. Potatoes seemed to be the most highly favored vegetable item. Of this group of families, 33.3 percent, served this particular food item either daily or at each meal.

Desserts were reported as consumed infrequently, with cookies being consumed most often. Pies and cakes were less popular as dessert items than were cookies.

The diets of the infants were equally inadequate. The data revealed that many of the infants were not introduced to the basic food items until a very late age. The majority of the infants, 51.4 percent, were not offered cereal, which is usually the first food offered to an infant, until the age of 2 to 4 months. Cereal was introduced to three infants as late as 7 to 9 months of age. One infant was given cereal as early as the first month of life. Most of the infants were introduced to cereal during the first 6 months of life. All of the participating mothers offered cereals in the ready-prepared forms.

In comparing the family diets and those of the infants, vegetables and fruits were not frequently consumed

by the majority of the family members, nor were they offered to the infant until the child was 8 to 10 months of age. This is a very late date for the introduction of vegetables and fruits. Vegetables prepared in the home, either strained or chopped, tended to be introduced at a later date than were the forms purchased ready-prepared. Strained fruits were introduced into the diets of the infants at approximately the same age levels as were strained vegetables. Fruits and vegetables tended to be purchased in the prepared forms.

The protein and iron consumption of the infants appeared to be very insufficient, since only 17.2 percent of the infants were offered meat, and this was between the age of 13 to 15 months. The majority of the mothers did not offer mixed dinners, junior foods, or toddler foods to the infant. In general, the mothers chose to go directly to table foods, which were offered as early as the first month of life and as late as 18 months.

Only 17.1 percent of the mothers chose to breast feed their infants. Two mothers breast fed their infants until 11 to 12 months of age, a rather late age for the discontinuance of breast feeding. Bottle feeding was the selected method of feeding for 65.7 percent of the mothers. Only 9.0 percent of the mothers used both bottle feeding and breast feeding for their infants.

The formula choices were not widely diverse. The majority, 70.4 percent of the mothers, chose Similac over evaporated milk, skimmed milk, Advanced Similac, Enfamil, SMA, Prosobee and "other" formulas. This may be due to the fact that many hospitals offered Similac to the infant. The mothers may have continued using this formula upon returning home from the hospital, for fear of making an unwise selection in the choice of a formula.

An investigation of the first table foods offered to the infant revealed that Cream of Wheat was the item most frequently offered. Other first foods listed by the mothers were baked chicken, pinto beans, cornbread, and creamed potatoes. Two food items, cornbread and pinto beans, were reported as offered to an infant at 3 weeks of age.

The type of feeding instrument commonly used in feeding the infant was investigated. The infant feeder was not used by 88.9 percent of the mothers. Only one mother introduced her infant to the infant feeder at 2 months of age, and two mothers introduced their infants to the infant feeder at 5 months of age.

At the age of 5 to 6 months, feeding with a spoon was introduced to the infant by 29.6 percent of the mothers. One mother introduced her infant to the spoon as early as four weeks of age and five mothers as late as 11 to 12

months of age. The use of the cup was first introduced to the infant at age 6 to 8 months by 48.1 percent of the mothers. Two mothers introduced the cup as early as 3 to 5 months and three mothers as late as 18 to 20 months.

The mothers were requested to state what they considered to be a healthy child. The responses were varied. Many mothers, 33.3 percent, considered an active child as a healthy child. Being active does not necessarily constitute a sign of being healthy. Being fat, was listed by 18.5 percent of the mothers as a sign of good health. A good appetite was reported by 14.8 percent of the mothers as an indication of good health. Absence of frequent crying and adequate weight were considered as signs of good health by over one-tenth of the mothers.

The participants were asked to check the sources they sought for information concerning their infant. The physician was the most important source, being checked by 67.7 percent of the mothers. A relative was the next most important source of information concerning the infant, being checked by 29.6 percent of the participating mothers. Many persons confide in relatives when there is a problem in the family. The nurse as a source of information was reported by 25.9 percent of the participants. The nutritionist was of some importance to 14.8 percent of the participants.

One problem encountered by the participating mothers was how to encourage the child to eat. This is one area in which they recognized a need for assistance. Among the ways which the mothers listed for encouraging the child to eat were the following: eat along with the child, let the child taste the food, give the child a small amount of food at one time, tell the child that the food is good, and mix unliked food with a well-liked food.

The data revealed that there is a great need to encourage low-income families to make a better selection of food items to insure good nutrition for all family members, including the infant. The families did not make wise choices in the selection of food. Low-income may partially account for the late introduction of meats, fruits, and vegetables into the diets of the infants and for the inadequacy of fruits and vegetables in the diets of the adult family members. There is a need for the low-income family to be taught how to prepare baby foods at home and how to plan a food budget that is not only nutritionally adequate, but fits the family budget.

APPENDICES

APPENDIX A

INSTRUMENT

SURVEY FORM FOR OBTAINING INFORMATION CONCERNING
INFANT FEEDING PRACTICES

Dear Parents:

The following questionnaire deals with infant feeding practices. Will you please answer the following questions to the best of your ability?

Part I - Family Background Information

1. Including yourself, how many members are in your household?

Adults (18 yrs. and older)	Children (12 mos. to 17 yrs.)
Male _____	Male _____ Ages _____
Female _____	Female _____ Ages _____

2. How many preschool age children do you have? Number _____

Male _____	Ages _____	Female _____	Ages _____
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3. Please check the age level of your child (children) now enrolled in a day care center.

12 to 15 mos. _____	16 to 19 mos. _____	20 to 24 mos. _____
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4. Check highest grade level completed by heads of household.

	<u>Mother</u>	<u>Father</u>
Elementary school		
8th grade or less	_____	_____
Attended high school, but		
did not graduate.	_____	_____
Graduated from high school. . .	_____	_____
Attended college, but		
did not graduate.	_____	_____
Obtained a college degree . . .	_____	_____
Trade school (specify) _____		

5. Are you now employed outside the home?

Full-time _____ Yes _____ No _____

Part-time _____ Yes _____ No _____

6. To what extent does each of these factors influence your family's food purchases?

	<u>Little</u>	<u>Some</u>	<u>Much</u>
Television commercials	_____	_____	_____
Cost of the food	_____	_____	_____
Magazine advertisements	_____	_____	_____
Newspaper advertisements	_____	_____	_____
Grocery store advertisements	_____	_____	_____
Likes and dislikes of family members	_____	_____	_____
Opinions of friends	_____	_____	_____
Nutritional knowledge	_____	_____	_____

7. Are the following food items included in your family's diet?

<u>Food Item</u>	<u>Each Meal</u>	<u>At Least Once a Day</u>	<u>2 or 3 Times per Week</u>	<u>Occasionally</u>	<u>Never</u>
a) Bread	_____	_____	_____	_____	_____
b) Milk as a beverage	_____	_____	_____	_____	_____
c) Meat (any type)	_____	_____	_____	_____	_____
1) beef	_____	_____	_____	_____	_____
2) pork	_____	_____	_____	_____	_____
3) poultry	_____	_____	_____	_____	_____
4) fish	_____	_____	_____	_____	_____

<u>Food Item (cont'd)</u>	<u>Each Meal</u>	<u>At Least Once a Day</u>	<u>2 or 3 Times per Week</u>	<u>Occasion-ally</u>	<u>Never</u>
d) Fruits					
1) canned	_____	_____	_____	_____	_____
2) fresh	_____	_____	_____	_____	_____
3) frozen	_____	_____	_____	_____	_____
4) citrus juices	_____	_____	_____	_____	_____
e) Vegetables					
1) green leafy	_____	_____	_____	_____	_____
2) green/yellow	_____	_____	_____	_____	_____
3) potatoes	_____	_____	_____	_____	_____
4) others	_____	_____	_____	_____	_____
f) Desserts					
1) puddings	_____	_____	_____	_____	_____
2) pies	_____	_____	_____	_____	_____
3) cakes	_____	_____	_____	_____	_____
4) ice cream	_____	_____	_____	_____	_____
5) cookies	_____	_____	_____	_____	_____

Part II - Infant Feeding Practices

1. How was or is your infant now enrolled in a day care center fed?

Breast-fed Yes _____ No _____ Number of months _____

Bottle-fed Yes _____ No _____ Number of months _____

Both _____

2. At what age did you or will you wean your baby from the breast?

Month _____

3. At what age did you or will you wean your baby from the bottle?

Month _____

4. At what age were these foods introduced to your baby now enrolled in a day care center? How were they prepared?

	<u>Age of Infant</u>	<u>Ready Prepared</u>	<u>Prepared at Home</u>	<u>Both</u>
a) Fruit juices	_____	_____	_____	_____
b) Cereal	_____	_____	_____	_____
c) Vegetables				
1) strained	_____	_____	_____	_____
2) chopped	_____	_____	_____	_____
d) Fruits				
1) strained	_____	_____	_____	_____
2) chopped	_____	_____	_____	_____
e) Meats	_____	_____	_____	_____
f) Mixed dinners	_____	_____	_____	_____
g) Junior foods	_____	_____	_____	_____
h) Toddler foods	_____	_____	_____	_____
i) Table foods	_____	_____	_____	_____

5. What was the first table food offered to your infant now enrolled in a day care center? At what age was it offered?

Food _____ Age _____

6. Do you feed your baby on a regularly scheduled basis?
Yes _____ No _____ Specify when you feed him/her.

7. Which infant formula or formulas do you or did you give to your baby?

Evaporated milk _____
Skimmed milk _____
Similac _____
Advanced Similac _____

Enfamil _____
SMA _____
Prosobee _____
Other _____

8. Check below the factor of factors which influenced your choice of the formula you now use or used.

Advice of physician_____	Advice of social worker_____
Advice of friend_____	Advice of health nurse_____
Advice of relative_____	Cost of the formula_____
Advice of dietitian_____	Previous experience with other children_____

9. At what age did you introduce your child to a cup? Month_____
10. At what age did you introduce your child to a spoon? Month_____
11. If an infant feeder was used, at what age did you introduce it to your infant? Month_____
- At what age did you wean your infant from this device? Month_____
12. At what age did you let your child attempt to feed himself/herself? Month_____
13. Who usually feeds the infant, if you are now employed outside the home?

14. How do you introduce new foods into your baby's diet? _____

15. Do you have a blender? Yes_____ No_____

If so, do you use it to prepare baby foods? Yes_____ No_____

What foods did you, or do you prepare for your infant with the blender?

16. Do you read the labels on baby food containers? Yes _____ No _____
What label information do you read?

17. What are the three greatest problems you have in feeding your infant?
a) _____
b) _____
c) _____
In which area do you need help? _____

18. From which of these sources do you seek information, if there is a problem with your infant?
Physician _____ Nurse _____
Friend _____ Nutritionist _____
Relative _____ Other _____
19. How do you encourage your child to eat? _____

20. What do you consider a healthy child? _____

21. Which meals does your family sit down and eat together?
- | | <u>During the Week</u> | <u>Weekends</u> | <u>Occasionally</u> | <u>Seldom</u> |
|-----------|------------------------|-----------------|---------------------|---------------|
| Breakfast | _____ | _____ | _____ | _____ |
| Lunch | _____ | _____ | _____ | _____ |
| Dinner | _____ | _____ | _____ | _____ |

APPENDIX B

COPY OF APPROVAL FORMS

TEXAS WOMAN'S UNIVERSITY

DENTON, TEXAS 76204

SURVEY

INFANT FEEDING PRACTICES SURVEY

I AM PARTICIPATING ON A VOLUNTARY BASIS ONLY.

SIGNATURE _____

TEXAS WOMAN'S UNIVERSITY

(Form B)

Consent to Act as a Subject for Research and Investigation:

I have received an oral description of this study, including a fair explanation of the procedures and their purpose, any associated discomforts or risks, and a description of the possible benefits. An offer has been made to me to answer all questions about the study. I understand that my name will not be used in any release of the data and that I am free to withdraw at any time.

Signature

Date

Witness

Date

Certification by Person Explaining the Study:

This is to certify that I have fully informed and explained to the above named person a description of the listed elements of informed consent.

Dorothy L. Corley
Signature

3-26-79
Date

Graduate Student, TWU
Position

Witness

Date



DALLAS COUNTY COMMUNITY ACTION COMMITTEE, INC.

PARENT CHILD CENTER
2850 SINGLETON BLVD.
DALLAS, TEXAS 75212

(214) 638-2560

April 5, 1979

Human Research Committee
Texas Woman's University
Denton, Texas 76204

Dear Committee Chairperson:

Dorothy Corley has my permission to study the infants at the Parent-Child Center as a part of her research on "Infant Feeding Practices", as a partial fulfillment for a Master's Degree from Texas Woman's University.

Sincerely,

Nell Davis
Project Director
Dallas Parent-Child Center

ND/jw

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