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thesis entitled
ASSOCIATION OF HOMEMAKER ATTITUDES
TO NUTRITION KNOWLEDGE
presented by
Barbara L. Kreutz
has been accepted towards fulfillment
of the requirements for
Ph.D. degree in Family Ecology

A handwritten signature in cursive script, reading "Beatrice Parkman".

Major professor

Date Aug 23, 1974

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ABSTRACT

ASSOCIATION OF HOMEMAKER ATTITUDES
TO NUTRITION KNOWLEDGE

By

Barbara L. Kreutz

Nutritional inadequacy is thought to be related to a discrepancy between availability of nutrition information and adoption of acceptable nutrition practices. To better understand those factors which affect nutrition practices, specific elements associated with nutritional choice are investigated, as these attitudes and characteristics of homemakers relate to nutrition knowledge.

Data for this research were gathered as part of an Expanded Nutrition Evaluation Study designed by the Institute for Family and Child Study and conducted by the Michigan Cooperative Extension Service. A purposive sample of 273 homemakers was drawn. These homemakers were a part of the Expanded Nutrition Program.

The major objective is twofold; to develop attitudinal constructs from interview statements, and to examine the relationships and associations of those attitudes with specific characteristics of homemakers and their knowledge of nutrition.

Psychological constructs were developed from operational

definitions as suggested by the Rokeachean theory of central-peripheral dimension of a cognitive structure. Factor analysis, oblique multiple groups analysis, was used to develop four constructs: management, homemaker role, parent role, and attitude toward education. A fifth construct consisting of statements used to measure nutrition knowledge was adopted from the original nutrition interview questionnaire. Coefficient alphas of .75, .76, .82, .71, and .71 were attained.

Five hypotheses were tested by using simple correlation coefficient analysis, multivariate-univariate analysis of regression, and analysis of variance techniques:

1. There are no significant relationships among managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, education, age, amount of monthly income, number of children, size of household, number of financial sources received, residence, and ethnic background of homemakers to nutrition knowledge.

The overall null hypothesis is rejected at a $P < .01$. Positively correlated relationships existed between non-authoritarian parent role, satisfying homemaker role, positive attitude toward education, managerial control, educational attainment and residence. Negatively correlated relationships were found between ethnic background and younger homemakers to higher-level nutrition knowledge.

2. There are no predictable criteria of variation in nutrition knowledge from specific measures of homemaker attitudes.

The overall null hypothesis is rejected at a $P < .0001$. Significant associations were found between an increase in nutrition knowledge score of .134 for each cumulative degree in managerial control at a $P < .0019$; between an increase in nutrition knowledge score of .129 for

each cumulative degree in satisfying homemaker role at a $P < .0039$; between an increase in nutrition knowledge score of .294 for each cumulative degree in non-authoritarian parent role at a $P < .0001$; and between an increase in nutrition knowledge score of .133 for each cumulative degree of positive attitude toward education at a $P < .0001$.

3. There are no predictable criteria of variation in attitudes and nutrition knowledge from specific measures of homemaker characteristics.

The overall null hypothesis is rejected at a $P < .0001$. Two significant associations were found for education and for age. With each additional year of education, there were predictable associations between attitudes of managerial control by .175, satisfying homemaker role by .179, non-authoritarian parent role by .075, positive attitude toward education by .374, and homemakers' knowledge of nutrition score by .192 at a $P < .0001$. With each additional year of age, there were predictable associations between attitudes of managerial control by $-.004$, satisfying homemaker role by $-.006$, non-authoritarian parent role by $-.000$, knowledge of nutrition score by $-.003$, and positive attitude toward education by .004 at a $P < .0659$. Hypothesized associations between amount of monthly income, number of children, household size, and number of financial sources were not rejected at P 's $< .1226$, $< .9960$, $< .8459$, and $< .6816$, respectively.

4. There are no predictable differences between urban homemakers and rural homemakers in managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and their knowledge of nutrition.

The overall null hypothesis is rejected at a $P < .0269$, to the

extent that there were significant differences between cell means in non-authoritarian parent role at a $P < .0012$, and in nutrition knowledge score at a $P < .0091$, for rural non-farm homemakers.

5. There are no predictable differences among Caucasian, Black and Spanish American homemakers in managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and their knowledge of nutrition.

The overall null hypothesis is rejected at a $P < .0001$.

Caucasian homemakers indicate higher cell means on all four attitudes of managerial control at a $P < .0597$, satisfying homemaker role at a $P < .0001$, non-authoritarian parent role at a $P < .0001$, positive attitude toward education at a $P < .0001$, and nutrition knowledge score at a $P < .0001$. While indicating lower overall cell means for both Black and Spanish American homemakers, Black women indicate a more positive attitude toward education than indicated by Spanish American women; and, in turn, Spanish American homemakers indicate a more non-authoritarian parent role than indicated by Black homemakers.

The findings from this study make a plea for precision in measurement and for recognition of the role that attitudes can play in both acquisition of knowledge and use of knowledge for bringing about change.

ASSOCIATION OF HOMEMAKER ATTITUDES
TO NUTRITION KNOWLEDGE

By

Barbara L. Kreutz

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CHAPTER I

INTRODUCTION

One of the identified problems in the decade of the 1970s is the notion of nutritional inadequacy in a land of abundance as well as nutritional inadequacy in the modern world at the edge of famine.

Man threatens to deprive himself of a future by refusing to recognize his predicament. Insanely we try to talk ourselves out of reality. We refuse to acknowledge the rising human tidal wave. We profess to believe that our civilization will be the first in history to attain immortality. We are convinced we know the secret of perpetuating our way of life with the aid of science and technology. Yet our fate is to be read as in an open book. We are dazzled into inactivity like the rodent facing the gaze of the snake. We do not seem to want to face facts or to make a courageous effort to regain control of our destiny by overcoming our demographic illiteracy. What we must do is start the great rescue operation of mankind.

Borgstrom, 1965, vii

An aspect of this impending dilemma concerns the nature of nutrition information which is widely disseminated through mass media, educational systems, and informal communication. The degree of accuracy of information according to scientific nutritional standards is not clearly known. One of the concerns of education has been that of a discrepancy between availability of nutrition information and adoption of acceptable nutrition practices. There is need to better understand those factors which affect these practices. Specially, what elements determine choice? That is, what specific attitudes, knowledge level

and characteristics are thought to be related to the management of everyday living, including the management of the family's food?

There is a philosophical background underlying choice. In recognition of this fact, Lewin (1943, 1947, 1958) conducted studies of attitudes and food practices to investigate some aspects of reasons people eat what they eat, and to study possible methods of changing these food habits. It appeared that in order to influence food habits, psychological factors influencing decisions about food must be understood in relation to peoples cognitive structure, in terms in which people think and speak about food; and to their motivations or the system of values and beliefs which determine the decisions of housewives as to what they consider to be good or bad, and partly on the way they perceive the particular situation.

Gross and Crandall (1963, p. 3) also recognized that choice as it affects management necessarily concerns people in their most intimate living situations and is interwoven with family and group relations. Management is the major means of achieving family goals and challenges the use of not only time, energy, money and material goods but also knowledge, interests, abilities, skills, attitudes of family members, and community facilities.

General concern, then, for nutritional inadequacy and the need of improving the conditions contributing to physiological health and development and to resource use, makes important a better understanding of those factors which affect the choice and practices in everyday living. This study seeks to investigate the association of selected attitudes and specific characteristics of homemakers to the acquisition

of nutrition knowledge.

Objectives

The major objective of this study is twofold: 1) to develop specific attitudinal constructs of high internal consistency, and 2) to examine the relationships and associations of those constructs and selected characteristics of homemakers to nutrition knowledge.

The specific objectives are as follows:

1. To develop attitudinal constructs related to management, homemaker role, parent role, education, and nutrition knowledge construct of high internal consistency.
2. To examine the relationships among those attitudes and specific characteristics of homemakers to nutrition knowledge.
3. To determine the predictable associations between attitudes of homemakers and nutrition knowledge.
4. To determine the predictable associations between specific characteristics of homemakers and attitudes and nutrition knowledge.
5. To determine the differences between specific characteristics of residence and ethnic background and attitudes and nutrition knowledge of homemakers.

The first objective is pursued through methodological development of attitudinal and nutrition knowledge constructs. The next four objectives are met by tests of hypotheses.

Assumptions

1. Child-feeding practices are perceived by homemakers as relevant areas of concern.
2. Responses to forced choice statements are reliable means for measuring homemaker attitudes and nutrition knowledge.
3. Responses to statements are inferences made by the homemaker about underlying states of expectancy.

Hypotheses

1. There are no significant relationships among managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, education, age, amount of monthly income, number of children, size of household, number of financial sources received, residence, and ethnic background of homemakers to nutrition knowledge.
2. There are no predictable criteria of variation in nutrition knowledge and specific measures of homemaker attitudes.
 - a. There is no association between nutrition knowledge and managerial control.
 - b. There is no association between nutrition knowledge and satisfying homemaker role.
 - c. There is no association between nutrition knowledge and non-authoritarian parent role.
 - d. There is no association between nutrition knowledge and positive attitude toward education.

3. There are no predictable criteria of variation in attitudes and nutrition knowledge and specific measures of homemaker characteristics.
 - a. There are no associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and education of homemakers.
 - b. There are no associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and age of homemakers.
 - c. There are no associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and amount of monthly income of homemakers.
 - d. There are no associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and number of children of homemakers.
 - e. There are no associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and size of household of homemakers.
 - f. There are no associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge

and number of financial sources received by homemakers.

4. There are no predictable differences between urban homemakers and rural homemakers in managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and their knowledge of nutrition.
5. There are no predictable differences among Caucasian, Black, and Spanish American homemakers in managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and their knowledge of nutrition.

Definitions

1. Attitude. The concept as defined by Rokeach (1972, p. 112) is that attitudes are a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner. By nature an attitude is enmeshed in a complex system of beliefs and values. Beliefs are considered a subsystem of an attitude, with underlying values rendering positive or negative valence.

2. Management attitude. This attitude is composed of beliefs which relate to the nature of the physical and social world as it involves one's existence, and the ability to influence or control the structure and operation of the physical or social environment.

3. Homemaker role attitude. An attitude which relates to the nature of the "self," as that self was learned by direct encounter with the homemaker role and as that role is reinforced by social consensus among one's reference groups.

4. Parent role attitude. This attitude toward the "generalized other" is learned by direct encounter with the parent role and with experiences associated with children.

5. Education attitude. Positive or negative attitudes toward educational sources of information and learning do not have the same taken-for-granted character as the previous three sets of attitudes. This attitude depends on learning experiences within the context of the person's social structure.

6. Nutrition knowledge. Appropriate information related to common essential foods included in the basic four food groups, to carbohydrates and fats, and to the affect of their intake upon one's health.

CHAPTER II

RELATED LITERATURE

The literature is a selected compilation related to the following divisions: development of attitude constructs, and attitudes and nutrition knowledge.

Development of Attitude Constructs

In discussing the nature of the choice-making process, Hoyt (1969, p. 6) acknowledges that freedom of choice is a matter of two inter-related freedoms. First, is man's freedom to choose his motivations, his beliefs, his objectives in living. Second, is his freedom to know and to select among alternatives that can or might bring about these objectives. The first is a matter of values: for what does he live? The second involves values also, but tests and measurements of various kinds as well. For both he needs knowledge.

Factors associated with choice are better understood when examined within a framework which accommodates a study of beliefs, attitudes, and values. Lewin's field theory (Hall and Lindsey, 1957) is characterized by behavior as a function of the field. Field, is defined as the mutual relations among interdependent facts which comprise the cognitive structure. A person, surrounded by a psychological environment as the stimulus situation, is assumed to have such

qualities as needs, beliefs and values, perceptual and motive system, which in interaction amongst themselves and with the objective environment produce a Life Space.

Theoretically, the region that is buried deeply in the central portion of the psychological Life Space is less accessible to the objective environment. The interconnection of the core or central portion and the outer or peripheral portion is dependent upon the nearness-remoteness, firmness-weakness, and fluidity-rigidity of their boundaries, with accessibility the counterpart of influence. Under these circumstances the objective environmental facts may have difficulty reaching the remote central region, and likewise a fact embedded in the central region could have little or no communication with the environment.

Individual psychological processes are derived from the relation of the concrete individual to the concrete situation, and, so far as internal forces are concerned, from the mutual relations of the various functional system that make up the individual. It is the relationships among components of a conceptual field rather than the fixed characteristics of the individual components which determine perception. Two regions are said to be connected where a fact in one region is in communication with a fact in another region. A fact, sensed or inferred, must exist in the psychological environment before it can influence or be influenced by the person.

Facts that exist in the region outside and adjacent to the boundary of the Life Space, a region which Lewin calls the Foreign Hull of the Life Space can materially influence the psychological

environment. That is, non-psychological facts, though not affecting the individual at a given time, can and do alter psychological ones at a later time. Deutsch (1954, p. 193) characterizes the various components of the non-psychological milieu in terms of the perceptions and manipulations they will support or permit, the perceptions and manipulations they will coerce, and the chain of events in the non-psychological milieu released by psychological interaction with any of its components.

Wright (1950), a psychological ecologist, uses the term "behavior setting" to refer to any part of the non-psychological environment perceived by the people of a community as appropriate for particular kinds of behavior. Whether positions in a social structure or region visualized in terms of geographical locations, these perceptions are shared frames of reference or collective intentions as to what is appropriate behavior in a given behavior setting or with a given behavior-object.

Lewin has suggested that the study of the facts in the Foreign Hull be called psychological ecology. The first step recommended in making a psychological investigation is to establish the nature of the facts which exist at the boundary of the Life Space since these facts help to determine what is and what is not possible, and what might or might not happen in the Life Space. There is a two-way communication between the two realms. Not only can environmental facts influence the person, personal facts can influence the environment.

Organization of the Central-Peripheral Dimension

Lewin did not develop fully in his theory the means by which the dynamics of the cognitive structure evolved. He did acknowledge the term "need" as a motivational concept, the nuclear concept around which other concepts cluster. Each need is considered a concrete fact, thereby linking the needs in the inner-personal region with properties of the environment which then motivate the kind of behavior which will occur. The term "valence" is a steering concept, the positive or negative value of that region, which is coordinated with a need and imparts values to the psychological and non-psychological environment.

Thus, a new region is differentiated out of the Life Space whenever a new fact comes into existence; a region disappears whenever a fact disappears or merges with another fact. A psychological fact is coordinated with a psychological region, giving emergence to a core-peripheral dimension. Lewin felt that eventually the term "need" would be dropped from psychology in favor of a more suitable concept, one that is more observable and measurable. Bavelas (1948) contributed considerable knowledge to the organization and dynamics of the central-peripheral dimension with a mathematical model of areas in the cognitive structure most and least susceptible to change in the organization of mental materials. It was not until considerably later, however, that a new set of constructs having definable and measurable attributes and organizational properties came into being. Rokeach (1960) proceeded to develop a single set of concepts, a single language, that is equally appropriate to the analysis of personality, ideology, and cognitive

behavior.

Attitudes are assumed to be by definition relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner (Rokeach, 1972, p. 112). This predisposition is thought to be altered through the organization or structure of beliefs or a change in the content of one or more of the beliefs entering into the attitude organization. It is to the describable and measurable structural properties of attitudes, only, that the remaining literature is related.

Beliefs are defined by Rokeach (1972, p. 2) as inferences made by an observer about underlying states of expectancy. Three assumptions underly the theory: 1) not all beliefs are equally important to the individual; 2) beliefs vary along a central-peripheral dimension; and 3) the more central a belief, the more it will resist change. The focus is the development of a conceptual approach to the relative importance or centrality of generic types of beliefs along a central-peripheral dimension, Figure 1. The importance of the organization of beliefs is in terms of their functional connectedness of centrality, more central the belief the more implications it has for other beliefs ordered along the dimension.

Thus, the organization of the central-peripheral dimension might be thought of as the following three layers: 1) In the central region and at the core are found beliefs which formulate attitudes about the nature of the world. Whether the world is basically a friendly or unfriendly place to live in; whether parental or authority figures are loving or punishing; whether people in general

Central-Peripheral Dimension		
Central		Peripheral
Specific content of Central Region	Formal content of Intermediate Region	Structural inter- connections of Peripheral Region
Nature of the physical world, the nature of the "self" and of the generalized "other."	Beliefs about autho- rity and the people who line up with authority, on whom one depends in seek- ing information to gain knowledge.	Beliefs derived from authority, with such attitudes or informa- tion filling in the details of one's knowledge.

Figure 1. An organizational representation of the cognitive structure.
(Reconstructed from the theory)

are characteristically to be trusted or feared; and whether the future is to be regarded with security or apprehension. There are beliefs about the "self," about self-identity, and about the way one orients the self in physical space; and there are beliefs about autonomy or dependence in relation to "others." 2) The formal content of the beliefs in the intermediate region concerns the nature of positive or negative authority, as any source to whom one looks for information about the world or to verify information already possessed. People differ in the kind of authority they depend on for information, as they have different ideas about the nature of authority, and different theories about the way to employ authority as a cognitive interrelationship between the person and the environment. 3) Beliefs of the peripheral region emanate from positive and negative authorities. It is assumed that all information impinging upon the person from the outside is either accepted or rejected for compatibility with

beliefs of the central region. This process may require accepting, altering or rationalizing the new information; then, to file the information in some form of internal organization for later application.

It is the structural interconnectedness among central, intermediate and peripheral beliefs that give the total belief system its integrated, holistic and systematic character.

Formulation of Constructs

Schaefer and Bell (1958) developed a parental attitude research instrument for measurement of concepts concerning parental attitudes toward child rearing. They proceeded to develop attitude scales of considerable comprehensiveness, on the assumption that in an early state of development, less reliable measures of a number of relevant variables containing specific variance might be preferable to investigating a limited number of very reliably measured variables. Their procedure for scale development is of interest to this study.

Statistically significant items from studies conducted by Mark (1953) and Shoben (1949) were sorted by clinical psychologists into groups of items which seemed psychologically compatible categories. Then, with a conceptual scheme derived from either theory formulated through concepts or developed by writers who offered additional information relevant to parent-child relationships, all items from the two studies were classified into one of 32 operationally defined categories. Items formulating the categories ranged from five to ten

in number, which suggests that some categories would have higher discriminating power than others.

Twenty-five mothers served as subjects for pre-testing these scales. After several successive trial forms, making use of new information acquired from previous trials, a pool of items was developed and standardized on samples of 100 women. Through this procedure of eliminating poorly correlated items and rewriting new statements, the Schaefer and Bell scale developed into an eight-item form, with a reliability of .82. The researchers emphasized that improvements in scale reliability were frequently rather dramatic following detection of the psychological basis of the success of discriminating items.

The Kuder-Richardson Formula 20 (1937) was used to estimate test-retest reliabilities of the eight-item scale after it was administered to nursing students of comparable age, education and socioeconomic background, with satisfactory correlations ranging in the sixties and seventies. To develop a more efficient test, the five most reliable items for each attitude scale were selected, resulting in 23 variables with five items per scale. The consistency reliability coefficients on the 23 scales were reported again as satisfactory.

Findings disclosed that many variables were related to education, with mothers of higher education usually having more approved attitudes toward child-rearing; and that logically, psychologically, and empirically homogeneous scales of attitude toward child-rearing will be useful in investigating theories of the influence of maternal

attitudes upon development of the child (p. 353).

Cross and Kawash (1968) revised and shortened the PARI or Parental Attitude Research Instrument in an attempt to assess authoritarianism toward child-rearing. To achieve more depth and precision, the three following attitude scales were combined: 1) Encouraging verbalization and equalitarianism as a democratic acceptance and rejection factor; 2) Irritability and rejecting of the homemaking role as an irritability and warmth factor. The homemaking role was later excluded so as to apply to both mothers and fathers; and 3) Excluding outside influence and deification as an authoritarian and democratic factor.

This new, shortened form was tested with 180 mothers and 166 fathers. As requested by the researcher, four factors were extracted by principal components analysis, only two of which reflected psychologically meaningful combinations of subtests. Scales within the authoritarian and warmth factors were reflected to eliminate negative correlations in the original matrix and so that a high score would indicate more of a given variable. The final shortened form consists of nine scales of five items each.

From the findings it was concluded that people who have liberal, democratic attitudes toward child-rearing tend to be less authoritarian in their ideological beliefs, as these attitudes might probably be best construed as a cluster of ideological beliefs; and that this shortened form of the PARI is potentially valuable for assessing non-authoritarian attitudes toward child-rearing (p. 97). Yater and associates (1968) also pose the notion that the PARI may be measuring

cultural attitudes, values, toward child-rearing rather than attitudes of specific groupings of mothers, for there appears to be a commonality of child-rearing attitudes across quite different socioeconomic and educational groupings.

More recently, an adaptation of the PARI was developed by Sims (1971) to learn how mothers felt about family life and their role as parents, in that those attitudes might have bearing on the child's physical development and nutritional status.

Sims used the shortened form of the instrument (Cross and Kawash, 1968), with the addition of the scale for Rejection of the Homemaking Role, which had originally been omitted. In that the original Cross and Kawash scale was not consistent with expectations, new scales were formed using the same 53 items. A multiple groups cluster analysis generated the following eleven clusters: "parents are 'all-wise'," "children should be treated as equals," "children should only listen to and trust parents," "unquestioned loyalty," "deception," "homemaking is being trapped in a dull job," "homemakers would like to get out!," "raising children is nerve-wracking," "occasional dissatisfaction with being a homemaker," "frequent dissatisfaction," and "residuals." Findings indicate a positive correlation between "parents are 'all-wise'," "children should only listen to and trust parents," and "unquestioned loyalty;" and a positive correlation between "homemakers would like to get out!" and "homemaking is being trapped in a dull job," "raising children is nerve-wracking," "occasional dissatisfaction with being a homemaker," "frequent dissatisfaction."

These psychosocial attributes also were correlated with selected

demographic and resource characteristics of the family. Some of the following findings were reported as significant at the .01 level:

1) number of persons in the home was positively correlated with "parents are 'all-wise'," "unquestioned loyalty," "deception," "trapped in a dull job" and powerlessness. Number of children under five years of age in the home was positively correlated with "parents are 'all-wise'," "unquestioned loyalty," and "trapped in a dull job." Parental occupation and education scale is positively correlated with treating child as an equal, nutrition is important, and importance of education. Socioeconomic status correlated positively with treating child as an equal, nutrition is important, and family centrism. Black ethnic background correlated positively with "only listen to parent," "trapped in a dull job," and powerlessness; while Caucasian was inversely related to "frequent dissatisfaction with children." Score on nutrition knowledge test was positively correlated with nutrition is important and inversely related to "trapped in a dull job," "parents are 'all-wise'," "listen only to parent," "unquestioned loyalty," "deception," and powerlessness.

In conclusion, Sims presented a patterning of associations. There emerged, among other types, a typology of maternal characteristics related to non-authoritarian attitudes toward child-rearing. She observed a basic disagreement with "parents are 'all-wise'," "listen only to parents," "unquestioned loyalty," "trapped in a dull job," and "deception;" while agreement with "treating child as an equal."

Attitudes and Nutrition Knowledge

Psychosystem functioning is assumed to be externally, not simply internally, controlled by feedback transactions with the environment; a condition which of necessity motivates and actively engages man in interpreting and defining the situation, choosing of action, and subsequently deciding in a complex adaptive system (Buckley, 1968). It is to this basic and general premise that the literature pertaining to attitudes and nutrition knowledge is related.

One of the earliest studies of motivation underlying food practices was conducted by Kurt Lewin (1943) during the first World War at a time of concerted interest in better utilization of scarce though available food. The objectives of the study were to investigate some aspects of why people eat what they eat and to study methods of changing food habits. In a mid-western community, 107 housewives were interviewed as to why they eat what they eat and as to how food comes to the table and why. Approximately 20 women in each of the following groups comprised the study: Whites of high income, middle income and low income; Czechoslovakians of middle income; and Black of low income but of middle-class social status.

The basic operation in any Lewinian scheme of scientific analysis is to explore the problem of where and how the psychological and the non-psychological aspects intersect in relation to a "channel theory." The non-psychological aspects of the study require knowledge of: 1) movement of food by series of steps through various channels with respect to the number of food channels existing for a particular family; 2) new channels which open or the old channels through which

traffic is increased should certain channels be blocked; and

3) attitudes and behavior sets of the cultural setting. These psychological forces influence an objective movement of food or lend a certain amount of resistance to the movement of food or tend to prevent, entirely, the entrance of food into particular channels. The number and percentages of families buying at varying intervals, using different channels, and eating food canned at home indicated that to some extent financial circumstances and objective cultural values do influence the extent to which various food channels are used, and the functions they serve.

Psychology of the "gatekeeper," on the other hand, concerns the cognitive structure of housewives as they think and speak about food; and the motivation of the system of values and beliefs behind their choice of food, which are psychological factors influencing the person who controls the channels. The cognitive structure relates to 1) food outside and within cultural availability and to consideration of what is recognized as "food for us;" 2) food for husband and children in that, although the housewives control the channels, they are influenced by the preferences and health of family members; 3) meal patterns as these culturally-defined patterns differentiate homogeneity indices for three meals. This is recognized as an important feature in regard to changes in food habits; and, 4) to the meaning of the eating situation as the "eating group" influences greatly the eating conduct and the eating ideology of the individual.

Motivation was examined by Lewin as values or motives and ideologies behind food selection, food needs and obstacles to be

overcome. The concept of value is not defined as much as the concept is implied in a frame of reference in evaluating foods, for values are part of a non-verbal system of reference. It was of importance, therefore, to learn of the relative strengths of the following frames of reference: expense, health, taste and status of various groups of people for various foods.

The methodological procedures used for examining motivation are simple, with inherent objective limitations of these methods recognized by Lewin, himself. One means for uncovering the value scales was the indirect method of noting, off hand, comments to one of four statements reflecting the following frames of reference (1943, p. 44):

a) Money, e.g., "Our family loves oranges, but we have stopped buying them. They are too expensive;" b) Health, e.g., "My children have to have a quart of milk a day for their teeth;" c) Taste, e.g., "I don't serve desserts at lunch time. We're not very fond of desserts;" and d) Status, e.g., "We have meats sent from Chicago." Relative weight of different frames of reference indicated relationships between values and income groups; while value frames associated with certain foods were detected by responses to the following five questions (1943, p. 46): What dishes would you be sure to serve if you were very short on money? What dishes would you be sure to serve if your only consideration were health? What dishes would you be sure to serve if your only consideration were to put on a "fuss" and have a company dinner? What foods would you be sure to serve if your only consideration were to "fill up" some people? Lewin concluded that the degree to which a food is considered essential might be of particular importance in planning changes of food habits.

As for food needs, the relative weight of the various frames of reference changes in time with changing needs. This is a result of satiation or variation in the situation or because of cultural forces toward diet variation. Continued consumption of the same type of food leads to a decrease in attractiveness and to a powerful force toward daily and seasonal cycles in food choices. Situational conditions are always present. A shortage of one frame of reference or value will increase the weight given in consideration for other frames of reference.

Obstacles to be overcome were recognized as problematic to planning changes of food habits, with the solution thought to be found in a decision made by the housewife concerning her own action with the group setting as an incentive for the decision and as facilitation and reinforcement. A system of values is the basis of some of the forces which determine decisions about food and which bring about conflicts of varying intensities.

Several years later Lewin (1947) further elaborated his interest in group processes. He visualized a circular character of organized life forming the function of self-regulation emerging from a vague idea corresponding to the Life Space of the individual. Deutsch (1968, pp. 390-91) also recognized that there might be a basic pattern which minds, societies and self-modifying communication networks have in common. A pattern known as "feedback," defined as a communication network which produces action in response to an input of information and includes the results of its own action in the new information by which it modifies its subsequent behavior. Deutsch observes that

the human mind functions with relative plasticity, it can change many of its operating rules with the aid of experience and thereby change its own structure of preference, rejection and association. The effect of experience is verified in Osgood's (1957, p. 200) discussion of perception as given meaning by dual control over the perceptual process. What a subject reports on his experience depends both upon the stimulus information given to his senses and upon the storage information derived from his past experience.

Any network whose operating rules; that is, structure, can be modified by feedback process is subject to internal conflict between its established working preference and the impact of new information; since the net acquires its preference through a process of history, its values need not be all consistent with each other (Deutsch, 1968, p.393). This principle of general plasticity of the individual mind in its growth during the life of the individual applies to the plasticity of the channels composing cultures and social institutions.

One might surmise that this line of theoretical development preceded the subsequent study. Lewin (1958) carried his interest of social change to group decisions as they concerned the relation of motivation to action and the effect of a group setting on the individual's readiness to change or to keep certain standards, and the function which reality perception should have. Group decisions are thought to depend partly upon how the group views the situation and therefore can be influenced by a change in this perception.

An experiment in changing food habits through lectures compared with group decision was conducted with six Red Cross groups, ranging in

size from 13 to 17 volunteers organized for home nursing. The objective of the sessions was to increase the use of variety meats in the diets of family members. The predominance of women influenced to serve a type of food never served before, after a lecture method and after a group decision, led Lewin to draw the following conclusions: As a result of active participation members of a discussion group have a chance to express motivations corresponding to different alternatives and, thus, the group may be more ready to make a decision. A decision, that is, about individual goals in a group setting. The merits of the face-to-face group is that groups carry change and that an individual is reluctant to depart from group standards. A degree of involvement in any discussion method must allow for freedom of discussion, as the objective rather than a subjective setting minimizes resistance to considering the problems and possibilities in an objective and unprejudiced manner. Motivation and decision are related by consideration of the particular conditions or by the state of indecisiveness changed into a state where the individual has "made up his mind." In a decision, the potency of one alternative is decidedly diminished, allowing the alternative and corresponding forces to dominate the situation. The act of decision has an effect of freezing the motivational constellation for action.

In a similar experiment reported in the same paper (1958), six groups of housewives, composed of 6 to 9 members per group, were compared for effects of lecture to effects of group decision, as those effects concerned increasing home consumption of milk in the form of fresh, evaporated, or both fresh and evaporated milk. An evaluation

was made after two weeks and after four weeks of each group subjected to lecture and to group discussion. Again, group decisions showed considerably greater effectiveness after two and four weeks for the consumption of both fresh and evaporated milk.

The theoretical objective of change as it affects the individual is of considerable importance. When discussing standards to be changed, attention is given not to the nature of the "thing" but to the "process." The group decision procedures, which avoid high pressure methods are sensitive to resistance to change and are most effective in removing counterforces within the individual, as the level of conduct is affected less by adding forces in the desired direction than by diminishing opposing forces. The overall effect of group decision seems to be attributed to individual involvement in the group decision, with the decision in the group setting, itself, a decisive factor. As a group level acquires value, it becomes a positive valence corresponding to a central force field with the force keeping the individual in line with the standards of the group. Many food habits are anchored in the relation between the individual and certain group standards, the resistance to change should diminish if one diminishes the strength of the value of the group standard or changes the level perceived by the individual as having social value. The relative emphasis on cognitive and on motivation processes in decision-making, as observed by Cartwright and Zander (1968, p. 407), vary from one group to another and within the same group at different times. One might expect, they conclude, that greater emphasis would be placed on cognitive aspects the more members are task-oriented or

group-oriented rather than self-oriented, and the more they see their relationships as promotively interdependent.

Recognition of cognitive and motivational processes in decision-making as related to food and nutrition continue to be of concern. Literature related to foods and nutrition indicates that an understanding of conditions and circumstances which surrounds the feeding of children may also provide insight into new approaches for teaching nutrition to mothers.

Eppright and associates (1970) recently investigated the matter of nutrition knowledge and attitudes of mothers in a North Central Regional Study of Diets of Preschool Children. Two thousand mothers of preschool children were interviewed to learn of the eating behavior of their children and certain family characteristics. Trained interviewers administered schedules designed to indicate, among other variables, knowledge of nutrition, attitudes toward nutrition, and permissiveness in feeding children.

Items for the nutrition knowledge schedule were selected by nutritionists. These true and false statements related to misconceptions about food, food composition, knowledge of nutrition, and the application of principles of nutrition. A panel of eight qualified nutritionists concurred on the deletion of ambiguous items and on correct measures for scoring. The remaining items were given to 150 lay people, with 35 of the most highly intercorrelated statements used in the nutrition knowledge test. Provision was made for indicating one of five degrees of certainty for the response.

Similar procedures were followed in the development of attitude

scales. These statements were formulated from interviews and open-end questionnaires, with the responses of homemakers analyzed for items to construct the scales for degrees of certainty: "agree," "disagree," "favorable," and "unfavorable."

Data were analyzed by simple correlation coefficients to measure relationships between nutrition knowledge, attitudes of mothers, and selected family variables, with the discussion related only to correlations of $-.058$ or $.058$, significant at the $.01$ level. Coefficient alphas of internal consistency for each attitudinal scale were not indicated.

Findings for nutrition knowledge reported higher scores for mothers in cities of 50,000 and over to be lower than for mothers of small cities and rural areas. Residence was not associated with variables on the attitude scales. Knowledge of nutrition was positively correlated to attitude toward nutrition, $.586$, and negatively correlated to permissiveness, $-.364$. The following example was given as typical of those items included in the scale on permissiveness: "Children should be allowed to eat whatever they want" (1970, p. 329).

Selected demographic variables, correlated with specific dependent variables, disclosed the following relationships: 1) income was significantly correlated to nutrition knowledge of mothers, $.27$, but not to permissiveness in child feeding; 2) larger household was negatively correlated with nutrition knowledge, $-.130$; and 3) education was positively correlated with nutrition knowledge, $.465$, and negatively correlated with permissiveness toward child feeding. Education generally was observed to be relatively, highly correlated with

nutrition knowledge and certain favorable attitudes as well as to dietary components. The conclusion was drawn that nutrition knowledge must focus not only on nutrition facts but also on their application under various conditions.

Nutrition knowledge related to specific demographic characteristics was examined by Kerr (1973) from data collected for an evaluation of a specific Expanded Nutrition Study in Michigan. The same data that are analyzed for this study.

From a purposive sample of 176 homemakers, independent variables of income and education were correlated with nutrition knowledge, which was estimated by the following procedure: On the basis of a score of four as the most appropriate answer and in descending numbers to one for the least appropriate answer, homemaker's responses were thus evaluated (1973, p. 35). Simple correlation analysis among six variables indicated correlations between nutrition knowledge and income of .105 and between nutrition knowledge and education of .304. Neither correlation coefficient was significant at the .01 level for tables designed for six variables, although there was recorded significance at the .01 level using two-variable correlations.

In the discussion of the limitations of the study, Kerr indicated that the responses to the nutrition statements were more representative of attitudes than representative of correct or incorrect nutrition information. This disclosure would seem to recommend caution in the interpretation of findings and to necessitate further analysis as to the reliability and validity of nutrition knowledge scores.

CHAPTER III

METHODOLOGY

Methodological procedures are discussed under four major divisions: selection of sample, design, selection of data, and analysis of data.

Selection of Sample

Six counties in lower peninsula Michigan having Expanded Nutrition Programs were selected by random sample to meet certain criteria: These counties each had a home economist employed to administer the program, and had consented to cooperate in the study. The sample consisted of families referred to the nutrition program by social agencies or by cooperative extension staff. From the beginning of data collection, consecutively enrolled families were accepted until the quotas were met, or six families per full-time nutrition aide employed to implement the programs. Of the 305 families enrolled in this manner during the first of a two-phase study, 273 homemakers had completed the Interview Schedule and recorded demographic information on the Biological Data Schedules. Data from these 273 families comprise the sample for this study.

Design

The research design is a multi-dimensional matrix constructed of five dependent variables: managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and nutrition knowledge. Eight independent variables include age, education, size of household, number of children, number of financial sources, amount of monthly income, residence and ethnic background of homemakers.

Selection of Data

Data for this study were supplied by the Cooperative Extension Service from schedules developed for an Expanded Nutrition Evaluation Study. Basic data were collected by graduate research assistants assigned to the project and by paraprofessional program aides whose primary responsibility is to teach program families. Methods used to obtain the information were developed in such a manner that the data could be collected by the research staff and provide a reasonable indicator of results (Appendix A). A schedule written in Spanish also was available to homemakers who did not speak English.

Information on families was obtained in two interview sessions. During the first visit to homes of families, biological data and demographic characteristics were obtained. The second visit sought homemakers responses to statements about "self," child-rearing practices, general social and educational experiences, and nutrition information. Specific attitude statements and certain characteristics of homemakers

form the data for statistical analyses. For this study 73 items were eventually selected through the following procedures.

Attitude Items in Interview Schedule

FORTAP: A Fortan Test Analysis Package was used to compute the degree of internal consistency among 99 items on the Homemaker Interview Schedule (Appendix A). This program designed for Likert model of scale construction uses a technique known as "Hoyt Reliability," which is an analysis of variance technique for internal precision. A full-scale test of reliability measured the internal consistency at .9294. A test of full-scale internal consistency was chosen as a test for reliability of items on the Homemaker Interview Schedule over the test-retest method of temporal consistency given the ambiguousness of information provided by the latter method, since means for determining appropriate interval between test administrations under similar conditions is always tenuous.

The computer generated clusters of items by factor analysis, reordered and grouped items according to their largest factor loading, linking each of the largest factor scores with the consecutive variable with which it most highly correlated. Eleven multiple group factors were thus created. The first factor contained 36 of the 99 items, with a coefficient alpha of .92 and accounted for .10 or approximately one-third proportion of reported variance. Collectively these items did not share one common focus of interest or concern, indicating the likelihood of a large underlying factor of communality. Two successionaly generated groups of 12 and 14 items, with coefficient alphas of .80

and .75, respectively, accounted for but .04 and .03 proportions of reported variance. The remaining eight groups of decreasing size registered coefficient alphas of .61 and considerably smaller, and collectively accounted for the remaining .16 proportion of variance. Together, the eleven generated multiple groups could account for but one-third proportion of total variance. Therefore this method for selection of items was discarded.

Construct Validation and Reliability

Because clusters of items generated by factor analysis proved to be unsatisfactory an alternative approach to the procedure for development of attitudinal constructs was necessitated. The Rokeachean theory of cognitive structure (1972, pp. 6-10) organized along a central-peripheral dimension suggested operational definitions for grouping interview statements into generic attitude types, Figure 1. The original 99 items were then distributed at face value along the dimension into the following theoretical constructs:

1. Statements which relate to the nature of the physical and social world as it involves one's existence. Within this classification were placed items pertaining to one's ability or inability to influence or control the structure and operation of the physical or social environment. This aspect of the dimension is labelled "management," with polarities ranging from external fate to internal control as measured by mean score established by the respondents identifying self on a continuum of strongly agree (1),

mildly agree (2), mildly disagree (3), and strongly disagree (4) to items defined by this construct.

2. Statements which related to the nature of the "self" as learned by direct encounter with the object of the attitude tend to be reinforced by social consensus among one's reference groups. This aspect of the dimension is labelled "Homemaker Role," with polarities ranging from unsatisfying to satisfying as measured by mean score established by the respondents identifying self on a continuum of strongly agree (1), mildly agree (2), mildly disagree (3), and strongly disagree (4) to items defined by this construct.
3. Statements which relate to the generalized "other" learned by direct encounter with the object of the attitude and associated experiences. This aspect of the dimension is labelled "Parent Role," with polarities ranging from authoritarian to non-authoritarian as measured by mean score established by the respondents identifying self on a continuum of strongly agree (1), mildly agree (2), mildly disagree (3), and strongly disagree (4) to items defined by this construct.
4. Statements which concern positive and negative authoritative sources of information, which do not have the same taken-for-granted character as the previous three sets of attitudes. This aspect of the dimension is labelled "Education," with polarities ranging from negative to positive as measured by mean score established by the respondents identifying self on a continuum of strongly agree (1), mildly agree (2),

mildly disagree (3), and strongly disagree (4) to items defined by this construct.

5. Statements about "Nutrition Knowledge" which comprise the last section of the Homemaker Interview Schedule is assessed from the 25 items of nutrition information by the Kerr (1973) measure for scoring. Nutrition statements were evaluated by Kerr and her major professor by designating the most appropriate response to each item, which is assigned a value of four. The remaining responses are assigned values of three, two, and one in descending order of appropriateness as measured by the respondents identifying self on a continuum of strongly agree (1), mildly agree (2), mildly disagree (3), and strongly disagree (4) to items defined by this construct.

Two professors from the Department of Family Ecology reviewed the appropriateness of the 74 items distributed among the four attitude types and concurred on the validation of the constructs.

To develop attitudinal constructs of high internal consistency, an oblique multiple groups analysis arranged the 74 items designated as attitude variables in the order specified by the researcher in compliance with operational definitions for theoretical constructs. Starting with items of highest item-total correlations, an additive process continued for each construct to build inter-item correlations of reliability. This additive process continued from the pool of items designated for a particular construct until the coefficient alpha ceased to increase in size (Appendix B). Coefficient alpha, the

average inter-item correlation of all items constituting a scale, represents the best estimate of internal consistency. Through the process described maximum coefficient alphas for the following attitudinal constructs were calculated: Management = .75, Homemaker Role = .76, Parent Role = .82, Education = .71. Nutrition Knowledge, based on the last 25 items of the Homemaker Interview Schedule and irrespective of item-total correlation process, registered a coefficient alpha of .71 (Appendix B). That the coefficient alphas may appear insufficiently low, less than .80, is given a probable reason by Crano and Brewer (1973, p. 231): One possible explanation for unreliability problems of this type is simply that the scale does not contain enough items. In a short test, the item-specific error that each question introduces can be so great that the overall inter-item correlation is very seriously attenuated. A full-scale measure on the 73 items recorded an internal consistency of .9212.

In discussing methods of construct validation, Kerlinger (1964, p. 453) lends further support to the merits of item-total calculations in the statement that any tester is familiar with the technique of correlating items with total scores. In using this technique, the total test score of any individual is assumed to be valid. To the extent that any item measures the same thing the total score does, to that extent the item is valid. Likert model of scale construction is known to develop scales of high reliability in both internal consistency and temporal stability. Further validation focuses upon the deduced relationships of the scale with some other indicators of the construct under investigation, as in convergent validation whereby a number

of other constructs to which a particular conceptualization is related defines a system of interrelated behaviors.

Inter-rater Reliability

Each attitudinal construct is designed as a bipolar concept composed of positively worded and negatively worded items to avoid response bias. Six graduate students selected by random sample from a graduate class roster in Family Ecology served as judges to determine the polarity of 48 items operationally defined by four attitudinal constructs.

The judges were given four envelopes each containing the appropriate items composing one of the following attitudinal constructs: 8 items for management, 11 items for homemaker role, 21 items for parent role, and 8 items for education. On the back of each statement the judges indicated which polarity of that particular bipolar continuum was represented (Appendix C). An overall inter-rater reliability of .71986 was calculated.

Scoring

Those items to which a "yes" response represents strongly agree (1) to statements of managerial fate, unsatisfying homemaker role, authoritarian parent role, and to negative attitudes toward education were scored as 1. The statements to which a "yes" response represented strongly agree (1) to attitudes of managerial control, satisfying homemaker role, non-authoritarian parent role, and to positive

attitude toward education were reflected for consistency in polarity of scoring, which then scored as 4 so that high scores would always indicate more of a given variable. Mean scores from single items were transformed into mean scores for attitudinal constructs as necessitated by statistical computations.

Establishment of nutrition knowledge scores was discussed in relation to nutrition knowledge construct validation and reliability (page 34). Distribution of scores for the five constructs is shown in Appendix D.

Analysis of Data

Data collected on Homemaker Interview Schedules were coded and quality checked for accuracy by graduate assistants assigned to the Expanded Nutrition Research Project, then transferred by key-punching and verification to computer processing cards. Methods used in the analysis of data is summarized in Table 1 and the instruments associated with each.

Table 1. Methods used in analysis of data.

Analysis	Data	Statistic and computer program
Description of the sample	Demographic characteristics from Biological Data Schedules	Frequency count, percentage, ¹ mean, and standard deviation
Attitudinal Constructs		Chi-square value ¹
Overall item reliability	Attitude statements	Post hoc test ¹
Construct validation	Committee, Family Ecology	F statistic ²
Construct item reliability	Validated attitudinal constructs	Coefficient alpha ³
Inter-rater reliability	Validated attitudinal constructs	F statistic ²
Nutrition Knowledge Construct	Validated attitudinal constructs	Coefficient alpha ³
Construct item reliability	Attitude scores	Mean ⁴
Transformation of item scores into construct scores	Nutrition knowledge scores	Mean ⁴
Distribution of scores in constructs	Attitude statements	Frequency count, percentage, ¹ mean and standard deviation
Test of hypothesis 1	Attitudes and demographic characteristics scores	Simple correlation coefficient ⁵

Test of hypotheses 2 and 3	Attitudes and demographic characteristics scores	Regression Coefficient ⁵
Associations among continuous variables: education, age, monthly income, number of children, size of household, number of financial sources and attitudes, and nutrition knowledge.		
Test of hypotheses 4 and 5	Attitudes and demographic characteristics scores	F statistic ⁵
Differences between discrete variables: residence, ethnic background and attitudes, and nutrition knowledge.		

¹CISSR. Analysis of Contingency Tables, Computer Institute for Social Science Research, Technical Report of CDC 6500: T.R. 72-8 (East Lansing, Michigan: Michigan State University).

²Baker, F. B. and T. J. Martin. FORTAP: A Fortan Test Analysis Package, analysis of variance technique. Revised for use on the CDC 3600 and CDC 6500 at Michigan State University by David J. Wright. Office of Research Consultation, School for Advanced Studies, College of Education. (East Lansing, Michigan: Michigan State University).

³Hunter, John E. and Stanley H. Cohen. Factor Analysis with Principle Components and Varimax Rotations. Computer Institute for Social Science Research, Package Program: CDC 3600 Extended Fortan. (East Lansing, Michigan: Michigan State University).

⁴Fortan program written by Judy Pfaff, Statistician and Computer programmer.

⁵Finns, Jeremy D., Multivariate-Univariate and Multivariate Analysis of Variance, Covariance, and Regression. Modified and adopted for use on the CDC 6500. Office of Research Consultation, School for Advanced Studies, College of Education, (East Lansing, Michigan: Michigan State University).

CHAPTER IV

DESCRIPTION OF SAMPLE

This chapter presents a brief background of the overall study, confidentiality of the research data, and a description of sample.

Background of the Overall Study

Expanded Food and Nutrition Education Programs are an integral part of the Department of Agriculture Extension Service in the State of Michigan. Personnel responsible for directing food and nutrition education and assistance programs have a continuing need for information of the population being reached and the impact of the programs on participants.

To this end, an Expanded Nutrition Evaluation Study was conducted through cooperation of the Agriculture Extension Service and the Institute for Family and Child Study, Michigan State University, to obtain objective criteria for evaluating the effectiveness of a specific expanded nutrition program. The investigation was conducted in two phases, during the years 1972 to 1974, so as to compare findings for improved nutrition knowledge and diets of low-income families. Data used for the present analysis, collected during the first phase, were made available through the Cooperative Extension Service of Michigan.

Confidentiality of the Research

Ethical responsibilities toward participants over the course of research were assumed from the initial decision to pursue the study through steps necessary to protect the confidentiality of research data. The director of the research project arranged so that all the participants were informed of all the features entailed in the biological indices used for measuring status of health, and explained that these data would be collected during two sessions approximately two weeks apart. Respect was held for the individual's freedom to decline to participate in research project or to discontinue participation at any time. There was not further investigation of those choosing not to participate or of those discontinuing the project.

The actual data were collected by graduate research assistants instructed as to the ethical principles in the conduct of research with human participants. Confidentiality is safeguarded by assignment of codes in replacement of participants names.

Description of Sample

The sample represents young homemakers in large portion, Table 2. The largest number of homemakers, approaching one-third the sample, are in the age range of 20-24 years. Approximately 41 per cent of the homemakers in the sample are less than twenty-five years of age, with only 11 per cent of the homemakers in the age group of forty years of age or older.

Chi-square tests of association administered to age in relation

Table 2. Characteristics of homemakers.

	Number of homemakers	Percentage of homemakers
Age Group		
Under 20 years	27	9.90
20-24 years	85	31.14
25-29 years	58	20.25
30-34 years	49	17.95
35-39 years	24	8.80
40-44 years	10	3.60
45-49 years	10	3.67
50-54 years	6	3.21
55 years and over	4	1.48
Total	273	100.00
Mean:	28.54	
Std Dev:	9.12	
Educational Attainment		
8th grade or less	52	19.33
9-12 grades	205	76.21
12 years or more	12	4.46
Total	269	100.00
Mean:	1.85	
Std Dev:	.47	
Ethnic Background		
Caucasian	154	56.41
Black	78	28.57
Spanish American	38	13.92
Oriental	1	.37
American Indian	2	.73
Other	0	
Total	273	100.00
Residence		
Urban	237	86.81
Rural Non-farm	36	13.19
Farm	0	
Other	0	
Total	273	100.00

to other characteristics of homemakers, Table 6, indicate five relationships of significance. Homemakers 24 years of age or less represented 37.92 percent of the sample with 9th grade education or more; 27.47 percent, with three household members or less; only 1.47 percent, with 4 children and more; 24.54 percent, with incomes of \$299 or less; and 2.59 percent, of Spanish American homemakers where more might have been expected.

Educational attainment of the homemakers is considerable in degree. Slightly more than 76 percent of the 269 homemakers reporting, indicated grades of education through high school; while nearly one-fifth of the sample represent homemakers with 8th grade education or less.

Chi-square tests of association for education in relation to other characteristics of homemakers indicate two relationships of significance. Less than one-half the sample, 42.75 percent, represents homemakers 25 years of age or more having 9th grade education or more. In representation of ethnic background, large proportions of both Caucasian and Black homemakers, 50.38 percent and 25.56 percent, respectively, have 9th grade education or more; whereas, 9.02 percent of Spanish American homemakers have education of 8th grade or less in contrast to only 4.51 percent with 9th grade education or more. Post hoc test indicates the expected value to be in reverse proportion, with fewer Spanish American homemakers of 8th grade education or less.

Ethnic backgrounds reveal that a predominately large number of homemakers are Caucasian, slightly over 56 percent; while approximately one-fourth of the sample, 28.57 percent, is represented by Black homemakers; and slightly more than one-tenth or 13.92 percent of the

sample composed of Spanish American homemakers. Oriental and American Indian, together, represent but 1 percent of the sample. Of additional interest is the knowledge that although a number of homemakers identify themselves as Caucasian, their spouses are of different ethnic background.

Significant chi-square tests of association for ethnic background in relation to other characteristics of homemakers are five in number. The predominance of Spanish American homemakers 25 years of age or older, as compared to those of 24 years or less. Of homemakers with 9th grade education or more, nearly one-half the sample is Caucasian and one-fourth the sample Black. Families receiving two or more sources of financial aid, in contrast to those receiving none or only one form of financial assistance, represent the largest percentage of homemakers in all three ethnic groups. More than one-fourth the sample, 27.41 percent, are Caucasian families receiving two or more sources of financial assistance in some form. Post hoc test reveals that the number of Black homemakers who do not receive any form of financial assistance to be smaller than expected. More than one-third the sample or 36.30 percent, receive \$300 or more in monthly income. Nearly one-half or 45.93 percent of the Caucasian families live in urban residences in contrast to 11.11 per cent who live in areas classified as rural, non-farm. All Black families, 28.89 percent of the sample, are urban dwellers.

Urban residence is represented by a large majority, 86.81 percent, of homemakers. The remaining 13.19 percent of the homemakers residing in rural areas are registered as rural, non-farm.

Chi-square test indicates that the percentage of urban residents receiving financial assistance is in direct proportion to the number

of financial sources received. The percentage of rural residents receiving assistance is in reverse proportion to the number of sources received, with 6.59 percent of non-farm families independent of any form of financial assistance.

In more than one-half the families, homemakers appear to be in a position of head of household, Table 3. Slightly more than 45 percent of the homemakers indicate a spouse as part of the present family composition, while approximately 54 percent do not.

The number of children reported by approximately one-fourth the homemakers, 25.27 percent, are two in number, with 2.79 children the mean of the sample. Homemakers with children more than four in number are represented by approximately 17.59 percent of the sample.

Chi-square tests of association administered to number of children in contrast to other family characteristics of homemakers, Table 6, indicate three relationships of significance. Homemakers age and size of household are logically in direct relation to increase in number of children. With increase in numbers of children and increase in monthly income, there is disparity for families with four children or more. It is of interest that 2.56 percent of the homemakers receive incomes of \$299 or less, while 25.27 percent receive incomes of \$300 or more. Families with three children or less represent 38.83 percent with incomes of \$299 or less, and nearly that same percentage, 38.33 percent, with incomes of \$300 or more. Table 4 may offer further clarification of monthly income shared among family members.

Nearly three-fourths of the children are eleven years of age or

Table 3. Family characteristics of homemakers.

	Number of homemakers	Percentage of homemakers
Marital Status		
Husband	124	45.42
Husband not indicated	149	54.58
Total	273	100.00
Number of Children		
Children not indicated	17	6.23
1	59	21.61
2	69	25.27
3	52	19.05
4	27	9.89
5	18	6.59
6	14	5.13
7	11	4.03
8	4	1.47
9 or more	2	.73
Total	273	100.00
	Mean: 2.79	
	Std Dev: 1.94	
Ages of Children		
	Number of Children	Percentage of Children
1 year or less	114	14.90
2-3	129	16.86
4-5	122	15.95
6-7	102	13.33
8-9	85	11.11
10-11	67	8.76
12-13	46	6.01
14-15	49	6.41
16-17	30	3.92
18-19	13	1.70
20 years or more	8	1.05
Total	765	100.00
	Mean: 4.15	
	Std Dev: 2.51	
Sex of Children		
Female	384	50.20
Male	381	49.80
Total	765	100.00

younger, with children of an age-range of two and three years representing the greatest number, 16.86 percent. Within the age range for the mean number are found 15.95 percent of the children four and five years of age. Of the total 765 children in the sample, 384 or 50.20 percent are female and 381 or 49.80 percent are male, nearly equal in ratio. The spacing of children from the first child to the second child and through to the ninth child or more have mean years of 2.33, 2.16, 2.19, 1.89, 2.27, 2.91, 2.25, 2.00 and 4.00, respectively.

Financial aids received by families are predominately those of USDA Food Stamps and Welfare, either of which represents considerably more than one-half the samples, Table 4. Eight or slightly less than 3 percent of 273 homemakers receive some source of financial assistance other than the four specified. USDA/FHA and Social Security form an appreciatively small percentage as sources of financial aid received.

A total of 353 families receiving financial aid would indicate that a number of families obtain more than one source of assistance. Nearly one-fourth of the families do not receive any form of financial assistance, whereas over one-half the homemakers indicate receiving aid from several sources. A mere 1.5 percent of the homemakers receive financial assistance from three sources.

Chi-square tests of associations on number of financial sources received in relation to other characteristics of homemakers, Table 6., indicate two values of significance previously discussed in relation to urban residents and Caucasian homemakers. In addition, about one-half or 52.75 percent of both low and high income families receive in nearly

Table 4. Financial characteristics of homemakers.

	Number of homemakers	Percentage of homemakers
Aid Received		
USDA Food Stamps	169	61.90
USDA/FHA	9	3.30
Welfare	158	57.88
Social Security	9	3.30
Other	8	2.94
Total	353	129.32
Number of Financial Aids Received		
None	68	24.91
1 source	61	22.34
2 sources	140	51.28
3 sources	4	1.47
Total	273	100.00
Mean:	1.29	
Std Dev:	.86	
Monthly Income		
Under \$100	13	4.76
\$100-\$199	24	8.79
\$200-\$299	76	27.84
\$300-\$399	77	28.21
\$400-\$499	41	15.02
\$500-\$599	22	8.06
\$600 or more	20	7.33
Total	273	100.00
Mean:	339.63	
Std Dev:	154.39	
Monthly Income Shared Among Family Members		
Monthly Income	Mean Number of Members	Standard Deviation
Under \$100	2.31	1.11
\$100-\$199	2.42	1.10
\$200-\$299	3.21	1.36
\$300-\$399	4.70	1.72
\$400-\$499	5.71	1.90
\$500-\$599	6.05	2.42
\$600 or more	5.10	2.69
Total	4.26	2.11

equal proportion 2 or more sources of aid, while 1.83 percent of low income and 23.08 percent of high income families receive none. It is curious that the percentage of non-assistance for homemakers receiving monthly incomes of \$300 or more is not greater than 23.08 percent, although this must be viewed in light of the number of members sharing the income.

Of the 273 families reporting monthly incomes, more than one-half of the families receive incomes ranging from \$200 to \$399, with that amount distributed nearly evenly into \$200-\$299 and \$300-\$399 categories. Few families indicate monthly incomes of less than \$200, with slightly over 15 percent of the families acknowledging incomes of \$500 or more. While the mean monthly income is recorded at \$399.63, the standard deviation from the mean is considerable.

Chi-square tests of association on amount of monthly income in relation to other characteristics of homemakers indicate values of significance previously discussed with respect to age, household size, number of children, number of financial sources, residence and ethnic background of homemakers. The mean number of family members sharing each financial category of monthly income is indicated in Table 4. On the whole there is a direct relationship between mean number of members and monthly income categories. Only for the category of \$600 or more is there a decline in the number of family members sharing that income. The last two categories indicate the largest standard deviation from the mean.

Household size, indicated in Table 5, may include occupants other than family members, for in a number of cases relatives or friends reside there. Three and four occupant households represent nearly 44 percent of the families. Two occupant and four occupant households occur in about one-sixth of the families. Small percentages of 1 percent or less in each instance are not shown by the 2.57 percent household sizes of ten occupants or more. Family size and household size are almost identical, indicating that there are probably relatively few occupants other than family members.

Table 5. Household size of homemakers.

Household size	Number of homemakers	Percentage of homemakers
1	5	1.83
2	41	15.02
3	61	22.34
4	58	21.25
5	44	16.12
6	23	8.42
7	11	4.03
8	14	5.13
9	9	3.30
10 occupants or more	7	2.57
Total	273	100.00
Mean:	4.43	
Std Dev:	2.20	

Table 6. Chi-square test of association between homemaker characteristics.

	2	3	4	5
1 Age	15.264 (1)	61.453 (1)	55.673 (1)	.756
24 yrs or less	3.35%, 37.92%	27.47%, 13.55%	39.56%, 1.47%	9.16%, 22.71%
25 yrs or more	15.99%, 42.75%	11.72%, 47.25%	32.60%, 26.37%	15.75%, 13.19%, 30.04%
2 Education		2.811	.742	.024
8th grade or less		5.58%, 13.75%	13.01%, 6.32%	4.83%, 4.09%, 10.41%
9th grade or more		33.46%, 47.21%	59.11%, 21.56%	20.07%, 17.84%, 42.75%
3 Household Size			67.887 (1)	4.688
3 members or less			39.19%, 0.00	7.69%, 7.69%, 23.81%
4 members or more			32.97%, 27.84%	17.22%, 14.65%, 28.94%
4 Number of Children				1.903
3 children or less				19.41%, 15.02%, 37.73%
4 children or more				5.49%, 7.33%, 15.02%
5 Number of Financial Sources				
None				
1 source				
2 sources				
6 Monthly Income				
\$299 +				
\$300				
7 Residence				
Urban				
Rural, Non-farm				
8 Ethnic Background				
Caucasian				
Black				
Spanish American				

	6	7	8
1 Age			
24 yrs or less	26.589 (1)	.414	10.654 (5)
25 yrs or more	24.54%,16.48%	36.26%, 4.76%	23.70%,14.44%, 2.59%
	16.85%,48.12%	50.55%, 8.42%	33.33%,14.44%,11.48%
2 Education	.267	.000	58.790 (4)
8th grade or less	7.43%,11.90%	16.73%, 2.60%	7.14%, 3.38%, 9.02%
9th grade or more	34.20%,46.47%	69.89%,10.78%	50.38%,25.56%, 4.51%
3 Household Size	72.000 (1)	2.268	3.348
3 members or less	28.57%,10.62%	35.53%, 3.66%	22.96%,12.59%, 3.70%
4 members or more	12.82%,47.99%	51.28%, 9.52%	34.07%,16.30%,10.37%
4 Number of Children	44.962 (1)	.623	2.829
3 children or less	38.83%,38.33%	63.37%, 8.79%	41.85%,21.48%, 8.52%
4 children or more	2.56%,25.27%	23.44%, 4.40%	15.19%, 7.41%, 5.56%
5 Number of Financial Sources	43.375 (1)	15.383 (4)	10.807 (7)
None	1.83%,23.08%	18.32%, 6.59%	17.41%, 3.33%, 4.07%
1 source	11.36%,10.99%	19.41%, 2.93%	12.22%, 7.04%, 3.33%
2 sources	28.21%,24.54%	49.08%, 3.66%	27.41%,18.52%, 6.67%
6 Monthly Income		6.282 (3)	12.565 (5)
\$299 or less		38.46%, 2.93%	20.74%,16.67%, 4.07%
\$300 or more		48.35%,10.26%	36.30%,12.22%,10.00%
7 Residence			17.416 (4)
Urban			45.93%,28.89%,12.22%
Rural, Non-farm			11.11%, 0.00 , 1.85%

Chi-square values (1) of 10.827 or greater are significant at the 99.9 level, (2) 6.635 or greater are significant at the .99 level, and (3) 5.412 or greater are significant at the .98 level, with 1 degree of freedom. Chi-square values (4) of 13.815 or greater are significant at the 99.9 level, (5) 9.210 or greater are significant at the .99 level, and (6) 7.824 or greater are significant at the .98 level, with 2 degrees of freedom. Chi-square value (7) of 9.488 or greater is significant at the .95 level, with 4 degrees of freedom (Glass and Stanley, 1970).

CHAPTER V

FINDINGS

The results are presented in relation to the findings for the following divisions: description of responses to attitudes and nutrition knowledge, test of relationships hypothesis, and tests of predictive association hypotheses.

Description of Responses to Attitudes and Nutrition Knowledge

Responses of homemakers to statements composing each attitude and nutrition knowledge construct, Table 7, are represented as an average of items, which are then used as measurements of managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, and high level nutrition knowledge.

Intervals designated along the dimension for measurement of each attitude and nutrition knowledge scores are not of equal values. Two extremes, 1.5 or less and 3.6 or more, are but approximately one-half the length of intervals designated for 1.6-2.5 and 2.6-3.5. In that values could not be estimated for less than 1 and for more than 4, a decision was made to record the extremes of the dimensions at .5 intervals. Intervals of .9 allow for estimating values of mildly disagree, 2, and mildly agree, 3, thus capturing the vast majority of responses.

Table 7. Homemaker responses to statements in attitudes and nutrition knowledge constructs.

	Number of homemakers	Percentage of homemakers
Attitude Scores		
Managerial Control		
1) 1.5 or less	1	.37
2) 1.6 - 2.5	119	43.59
3) 2.6 - 3.5	150	54.95
4) 3.6 or more	3	1.10
Total	273	100.00
Mean:	2.568	
Std Dev:	.525	
Satisfying Homemaker Role		
1) 1.5 or less	0	
2) 1.6 - 2.5	184	67.40
3) 2.6 - 3.5	89	32.60
4) 3.6 or more	0	
Total	273	100.00
Mean:	2.326	
Std Dev:	.470	
Non-authoritarian Parent Role		
1) 1.5 or less	3	1.10
2) 1.6 - 2.5	203	74.36
3) 2.6 - 3.5	67	24.54
4) 3.6 or more	0	
Total	273	100.00
Mean:	2.234	
Std Dev:	.450	
Positive Attitude Toward Education		
1) 1.5 or less	4	1.47
2) 1.6 - 2.5	41	15.02
3) 2.6 - 3.5	154	56.41
4) 3.6 or more	74	27.11
Total	273	100.00
Mean:	3.092	
Std Dev:	.688	
Knowledge Scores		
Nutrition Knowledge		
1) 1.5 or less	0	
2) 1.6 - 2.5	63	23.08
3) 2.6 - 3.5	209	76.56
4) 3.6 or more	1	.37
Total	273	100.00
Mean:	2.773	
Std Dev:	.428	

Managerial control, responses falling within the interval of 3.6 or more, represent only 1.1 percent of the homemakers, with more than one-half the women, 54.95 percent, agreeing mildly to the concept of managerial control. A mean of 2.568 indicates that homemakers perceive themselves neither as subject to fate nor as agents of control; rather, they view themselves as mid-point on a managerial fate-control continuum.

Satisfying homemaker role, 3.6 or more, is not an attitude representative of this group of women. While nearly one-third the sample view themselves as mildly satisfied homemakers, one-third the sample are less than enchanted. A mean of 2.326 indicates that, on the whole, homemakers are mildly dissatisfied with the role of homemaker.

This sample does not represent non-authoritarian parents, although nearly one-fourth the homemakers, 24.54 percent, are non-authoritarian in their attitude toward the parent role. A mean of 2.234, around which is clustered nearly 75 percent of the sample, reflects a tendency toward an authoritarian attitude toward the parent role.

Slightly more than 27 percent of the homemakers have a positive attitude toward education, with more than one-half, 56.41 percent, of the sample representing a mildly positive attitude. A mean of 3.092 reflects an attitude to a degree approaching the extreme of an attitude which is positive toward education.

About three-fourths, 76.56 percent, of the homemakers indicate a considerable level of nutrition knowledge, with .37 percent scoring in the 3.6 or more interval. A mean of 2.773 is in mild agreement with a score of 4, which, after item reflection for scoring, is designated as the most appropriate response to items of nutrition knowledge.

A summation of homemaker responses to each item is presented by frequency and percentage in Appendix D.

Test of Relationships Hypothesis

The following research hypothesis is defined and tested by simple correlation coefficients analysis:

Hypothesis 1

There are no significant relationships among managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, education, age, amount of monthly income, number of children, size of household, number of financial sources received, residence, and ethnic background of homemakers to nutrition knowledge.

There are significant relationships at the .01 level among the following attitudes, characteristics of homemakers, and nutrition knowledge, Table 8, as reported in order of decreasing correlation coefficients: Positively correlated to high level nutrition knowledge are non-authoritarian parent role, satisfying homemaker role, positive attitude toward education, managerial control, education and residence. Negatively correlated to high level nutrition knowledge are ethnic background, and younger in age.

The Eppright and associates (1970) findings support several of these correlations. In that study were discussed simple correlations, .058 and -.058, significant at the .01 level. Nutrition knowledge was positively correlated with education, income and residence. Though positively correlated income was not significant in this test.

Significant relationships of nutrition knowledge to attitudes

Table 8. Simple correlation coefficients of attitude and specific characteristics of homemakers to nutrition knowledge.

	1	2	3	4	5	6	7
1 Management	1.000000	.367011	.152394	.324272	.357848	-.215597	.278666
2 Homemaker Role		1.000000	.499928	.303466	.479288	-.219792	.262457
3 Parent Role			1.000000	.203628	.511825	-.063198	.116605
4 Education				1.000000	.417508	-.035806	.295925
5 Nutrition Knowledge					1.000000	-.158819	.312783
6 Age						1.000000	-.313762
7 Education							1.000000
8 Household Size							
9 Number of Children							
10 Number of Financial Sources							
11 Monthly Income							
12 Residence							
13 Ethnic Background							

	8	9	10	11	12	13
1 Management	-.222614	-.219454	-.054458	-.008466	.007987	-.156068
2 Homemaker Role	-.070102	-.076221	-.099765	.136466	.102184	-.304454
3 Parent Role	-.042712	-.064804	-.189748	.183638	.197223	-.193159
4 Education	.010730	-.002064	-.075074	.117383	.026743	-.259432
5 Nutrition Knowledge	.002661	-.014533	-.103272	.141247	.158769	-.277037
6 Age	.318614	.281539	.010142	.052021	-.005509	.148669
7 Education	-.173539	-.163743	.017675	.001102	.008301	-.296794
8 Household Size	1.000000	.926160	-.088380	.493590	.106160	.084749
9 Number of Children		1.000000	.005362	.436280	.027201	.094686
10 Number of Financial Sources			1.000000	-.414199	-.237944	.073779
11 Monthly Income				1.000000	.174235	-.105348
12 Residence					1.000000	-.102773
13 Ethnic Background						1.000000

Correlation coefficient values (1) of $-.158$, $.158$ or greater are significant at the $.99$ level.
N = 269.

and characteristics leave two relationships difficult to explain. The negative relationship, $-.277037$, of nutrition knowledge to ethnic background, and the positive relationship, $.158769$, of nutrition knowledge to residence. These variables are later subjected to tests of hypotheses (pages 68, 70).

The overall null hypothesis is rejected at a $P < .01$.

Tests of Predictive Association Hypotheses

The following research hypotheses are defined and tested by multiple regression coefficient analyses:

Hypothesis 2

There are no predictable criteria of variation in nutrition knowledge from specific measures of homemaker attitudes.

Table 9. Predicted regression coefficients between attitudes of homemakers and nutrition knowledge.*

	Managerial control	Satisfying homemaker role	Non-authoritarian parent role	Positive attitude toward education
Nutrition Knowledge	$P < .0019$	$P < .0039$	$P < .0001$	$P < .0001$
Multiple $R^2 = 42.12$	Beta = .134	Beta = .129	Beta = .294	Beta = .133
Univariate $F = 48.02$	S.E. = .042	S.E. = .044	S.E. = .045	S.E. = .028
$P < .0001$				
Added variance accounted for	2.176	1.865	9.281	4.946
Multivariate $F = 48.025$, with 4 and 264 degrees of freedom				

*F test of association between dependent and independent variables is significant at $P < .0001$. $N = 269$.

Hypothesis 2a. There is a significant association, $P < .0019$, between nutrition knowledge and managerial control, Table 9. Of the 42.12 percent of nutrition knowledge explained by managerial control, satisfying homemaker role, non-authoritarian parent role and positive attitude toward education, approximately 2 percent or 2.176 of additional variance may be accounted for by managerial control. In reordering the four independent variables in the equation so that the variable, managerial control, was ordered last and tested first, the dependent variable or nutrition knowledge score increases .134 for each cumulative degree in attitude toward managerial control.

The overall null hypothesis is rejected at a $P < .0001$.

Hypothesis 2b. There is a significant association, $P < .0039$, between nutrition knowledge and satisfying homemaker role, Table 9. Of the 42.12 percent of nutrition knowledge explained by managerial control, satisfying homemaker role, non-authoritarian parent role and positive attitude toward education, slightly less than 2 percent or 1.865 of additional variance may be accounted for by satisfying homemaker role. In reordering the four independent variables in the equation so that the variable, satisfying homemaker role, was ordered last and tested first, the dependent variable or nutrition knowledge score increases by .129 for each cumulative degree in attitude toward satisfying homemaker role.

The overall null hypothesis is rejected at a $P < .0001$.

Hypothesis 2c. There is a significant association, $P < .0001$, between nutrition knowledge and non-authoritarian parent role, Table 9. Of the 42.12 percent of nutrition knowledge explained by managerial

control, satisfying homemaker role, non-authoritarian parent role and positive attitude toward education, more than 9 percent or 9.281 of additional variance may be accounted for by non-authoritarian parent role. In reordering the four independent variables in the equation so that the variable non-authoritarian parent role was ordered last and tested first, the dependent variable or nutrition knowledge score increases by .294 for each cumulative degree in non-authoritarian parent role. This is the greatest association of the four variables.

The overall null hypothesis is rejected at a $P < .0001$.

Hypothesis 2d. There is a significant association, $P < .0001$, between nutrition knowledge and positive attitude toward education, Table 9. Of the 42.12 percent of nutrition knowledge explained by managerial control, satisfying homemaker role, non-authoritarian parent role and positive attitude toward education, about 5 percent or 4.946 of additional variance may be accounted for by positive attitude toward education. In reordering the four independent variables in the equation so that the variable positive attitude toward education was ordered last and tested first, the dependent variable or nutrition knowledge score increases by .133 for each cumulative degree in positive attitude toward education.

The overall null hypothesis is rejected at a $P < .0001$.

Summary. That non-authoritarian parent role predicted a greater association for nutrition knowledge, .294, and accounted for nearly one-fourth or .9281 of the total variance than was predicted by the other three attitudes may be understood in light of the statements forming that construct (Appendix B). Nearly one-half the 21 items pertain to

child-feeding practices, which may further explain an association of .294 to nutrition knowledge. The correlation between non-authoritarian parent role and nutrition knowledge is .51, thus representing the largest coefficient in the matrix of attitudes and nutrition knowledge, Table 8.

Predictive values for nutrition knowledge from positive attitude toward education, .133, and managerial control, .134, are but approximately one-half the predicted association of non-authoritarian parent role. A greater association between positive attitude toward education and nutrition knowledge might be expected. In reviewing the 8 items, one could conclude that homemakers perceive the statements in relation to their children rather than in relation to their own educational development. Satisfying homemaker role seems to contribute little to nutrition knowledge.

Hypothesis 3

There are no predictable criteria of variation in attitudes and nutrition knowledge from specific measures of homemaker characteristics.

Hypothesis 3a. There are predictable associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and educational attainment of homemakers at a $P < .0001$, Table 10. Individually, 12.59 percent of managerial control, 11.66 percent of satisfying homemaker role, 7.74 percent of non-authoritarian parent role, 10.57 percent of positive attitude toward education, and 12.65 percent of nutrition knowledge or a total of 55.21 percent of these attitudes and nutrition knowledge may be explained by educational attainment of

Table 10. Predicted regression coefficients between attitudes, characteristics of homemakers and nutrition knowledge.*

	Education	Age	Income	Children	Household	Sources
	P < .0001	P < .0659	P < .1226	P < .9960	P < .8459	P < .6816
Managerial control						
Multiple R ² = 12.59	Beta = .175	Beta = -.004	Beta = .000	Beta = -.012	Beta = -.024	Beta = -.016
Univariate F = 6.28	S.E. = .049	S.E. = -.026	S.E. = .018	S.E. = .029	S.E. = .027	S.E. = .028
P < .0001						
Satisfying homemaker role						
Multiple R ² = 11.66	Beta = .179	Beta = -.006	Beta = .000	Beta = -.008	Beta = -.006	Beta = -.017
Univariate F = 5.76	S.E. = .053	S.E. = .028	S.E. = .019	S.E. = .032	S.E. = .030	S.E. = .031
P < .0001						
Non-authoritarian parent role						
Multiple R ² = 7.74	Beta = .075	Beta = -.000	Beta = .000	Beta = -.014	Beta = -.011	Beta = -.048
Univariate F = 3.66	S.E. = .049	S.E. = .026	S.E. = .018	S.E. = .029	S.E. = .028	S.E. = .029
P < .0017						
Positive attitude toward education						
Multiple R ² = 10.57	Beta = .374	Beta = .004	Beta = .000	Beta = -.010	Beta = -.011	Beta = -.048
Univariate F = 5.16	S.E. = .073	S.E. = .039	S.E. = .027	S.E. = .044	S.E. = .028	S.E. = .029
P < .0001						
Nutrition knowledge						
Multiple R ² = 12.65	Beta = .192	Beta = -.003	Beta = .000	Beta = -.011	Beta = .006	Beta = -.024
Univariate F = 6.32	S.E. = .040	S.E. = .021	S.E. = .014	S.E. = .024	S.E. = .041	S.E. = .043
P < .0001						

Multivariate F = 3.2484, with 30 and 1034 degrees of freedom.

*F test of association between dependent and independent variables is significant at a P < .0001. N = 296.

homemakers. In reordering the six independent variables in the equation so that the variable educational attainment was ordered last and tested first, each additional year of education increases the dependent variables or homemakers attitudes toward managerial control by .175; satisfying homemaker role by .179; non-authoritarian parent role by .075, which is the least; positive attitude toward education by .374, which is the greatest; and their knowledge of nutrition by .192.

The overall null hypothesis is rejected at a $P < .0001$.

Hypothesis 3b. There are predictable associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and age of homemakers at a $P < .0659$, Table 10. Individually, 12.59 percent of managerial fate, 11.66 percent of unsatisfying homemaker role, 7.74 percent of non-authoritarian parent role, 10.57 percent of positive attitude toward education, and 12.65 percent of low-level nutrition knowledge or a total of 55.21 percent of these attitudes and nutrition knowledge may be explained by age of homemakers. In reordering the six independent variables in the equation so that the variable age was ordered last and tested first, each additional year of age lessens the degree of homemakers attitude toward managerial control by -.004; satisfying homemaker role by -.006; non-authoritarian parent role by -.000, which is inappreciable; knowledge of nutrition by -.003; while it increases homemakers degree of positive attitude toward education by .004.

The overall null hypothesis is rejected at a $P < .0659$.

Hypothesis 3c. There are no predictable associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and amount of monthly income of homemakers, Table 10.

The overall null hypothesis is not rejected at a $P < .1226$.

Hypothesis 3d. There are no predictable associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and number of children of homemakers, Table 10.

The overall null hypothesis is not rejected at a $P < .9960$.

Hypothesis 3e. There are no predictable associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and household size of homemakers, Table 10.

The overall null hypothesis is not rejected at a $P < .8459$.

Hypothesis 3f. There are no predictable associations between managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, nutrition knowledge and number of financial sources received by homemakers, Table 10.

The overall null hypothesis is not rejected at a $P < .6816$.

Summary. Homemakers educational attainment is the most powerful predictor of association between positive attitude toward education, nutrition knowledge, satisfying homemaker role, managerial control, and non-authoritarian parent role.

That educational attainment is a better predictor of association with positive attitude toward education, .374, than with nutrition

knowledge, .192, could be the effect of choice in indices for measuring education as compared to the indices for measuring nutrition knowledge. A coefficient alpha of .71 for each construct (page 35) is a measure of internal consistency among item-total correlations--all share a common response determinant and thereby "hanging together." Whereas the items of nutrition information, although internally consistent, may not be the most representative statements of common essential foods and important nutrients supplied by basic food groups. Were this so, the statements would be judged as poor indicators of nutrition knowledge.

Less readily explained is educational attainment of homemakers as a predictor of association to non-authoritarian parent role, .075, in relation to education as a predictor of association to nutrition knowledge, .192. What reason could be given for the discrepancy in associations when, as an independent variable, non-authoritarian parent role predicted an association of .294 to nutrition knowledge, Table 9. While the statements which formed the construct, non-authoritarian parent role, pertain predominantly to child-feeding practices, educational attainment as a predictor of association to non-authoritarian parent role, may be measuring relatively different tendencies.

Managerial control and satisfying homemaker role seem inconclusive as to their particular explanation of predictive association in relation to other attitudes or with homemaker characteristics when the latter are used as independent variables.

Age of homemaker while of a reasonable significance, .0659, is a poor predictor of variation in criteria measures of attitudes and nutrition knowledge.

Hypothesis 4

There are no predictable differences between urban homemakers and rural homemakers in managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and their knowledge of nutrition.

There are significant differences between urban homemakers and rural non-farm homemakers in non-authoritarian parent role and in nutrition knowledge, Table 11. Confidence intervals calculated through standard errors and estimate of effects found probability levels of .0012 for non-authoritarian parent role and .0091 for nutrition knowledge to be significant. Cell means for all five dependent variables are consistently larger for rural non-farm residence. Mean score of 2.2064, with a standard deviation of .3665 for urban homemakers in contrast to a mean of 2.4192, with a standard deviation of .3268 for rural homemakers indicates a margin in favor of non-authoritarian parent roles for rural non-farm residents. Mean score of 2.6975, with a standard deviation of .3124 for urban homemakers in comparison to a mean of 2.8400, with a deviation of .2289 for rural homemakers reveals rural homemakers higher level of nutrition knowledge.

The overall null hypothesis is rejected at a $P < .0269$. To the extent that there are significant differences in non-authoritarian parent role and nutrition knowledge for rural non-farm homemakers, the hypotheses are not rejected at a $P < .0012$ and at a $P < .0091$, respectively.

Table 11. Predicted differences between residence in attitude and nutrition knowledge of homemakers.*

	Urban		Rural, Non-farm	
	Mean	Standard deviation	Mean	Standard deviation
Managerial Control Univariate F = .0170 P < .8963	2.6115	.3823	2.6203	.3265
Satisfying Homemaker Role Univariate F = 2.8173 P < .0945	2.3458	.4021	2.4667	.4026
Non-authoritarian Parent Role Univariate F = 10.8058 P < .0012	2.2064	.3665	2.4192	.3268
Positive Attitude Toward Education Univariate F = .1911 P < .6624	3.1676	.5641	3.2111	.4981
Nutrition Knowledge Univariate F = 6.9045 P < .0091	2.6975	.3124	2.8400	.2289
Multivariate F = 2.5783, with 5 and 267 degrees of freedom.				

*F test of difference between dependent and independent variables is significant at a P < .0269. N = 269.

Hypothesis 5

There are no predictable differences among Caucasian, Black and Spanish American homemakers in managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and their knowledge of nutrition.

There are significant differences among Caucasian, Black and Spanish American homemakers in managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and nutrition knowledge, Table 12. Confidence intervals calculated through standard errors and estimate of effects identified probability levels of .0597 for managerial role, .0001 for satisfying homemaker role, .0001 for non-authoritarian parent role, .0001 for positive attitude toward education, and .0001 for nutrition knowledge to be significant for Caucasian homemakers. Cell means are greater for Caucasian women than for Black women in the following five dependent variables presented in order of decreasing differences: Non-authoritarian parent role with a mean of 2.3350 and a standard deviation of .3713 for Caucasian homemakers is greater than a mean of 2.0388 and a standard deviation of .2914 for Black homemakers. Satisfying homemaker role with a mean of 2.4839 and standard deviation of .4065 for Caucasian homemakers in contrast to a mean of 2.2087 with a standard deviation of .3310 for Black homemakers. Nutrition knowledge with a mean of 2.8086 and a standard deviation of .2756 for Caucasian homemakers is greater than a mean of 2.5875 and a standard deviation of .3062 for Black homemakers. Positive attitude toward education with a mean of 3.2957 and a standard deviation of .4905 for Caucasian women as compared to a mean of 3.0979 and a standard deviation of .5550 for Black women. The

Table 12. Predicted differences among ethnic backgrounds in attitudes and nutrition knowledge of homemakers.*

	Caucasian		Black		Spanish American	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Managerial Control Univariate F = 2.8493 P < .0597	2.6471	.3680	2.6161	.3951	2.4822	.3431
Satisfying Homemaking Role Univariate F = 17.9805 P < .0001	2.4839	.4065	2.2087	.3310	2.1842	.3683
Non-authoritarian Parent Role Univariate F = 18.8599 P < .0001	2.3350	.3713	2.0388	.2914	2.2267	.3358
Positive Attitude Toward Education Univariate F = 14.4002 P < .0001	3.2957	.4905	3.0979	.5550	2.7878	.6271
Nutrition Knowledge Univariate F = 18.3581 P < .0001	2.8086	.2756	2.5875	.3062	2.6033	.2980

Multivariate F = 8.1824, with 10 and 518 degrees of freedom.

* F test of difference among dependent and independent variables is significant at a P < .0001. N=269.

smallest difference is noted in managerial control where a mean of 2.6471 with a standard deviation of .3680 for Caucasian women is only slightly larger than a mean of 2.6161 with a standard deviation of .3951 for Black women.

When using the "Helmer Contrasts" for analyzing the three following ethnic groups: Caucasian homemakers in contrast to Black and Spanish American homemakers, two variables of importance are found. In the Black and Spanish American set, for non-authoritarian parent role the cell mean of 2.2267, with a standard deviation of .3358 for Spanish American homemakers is greater than a mean of 2.0388, with a standard deviation of .2914 for Black homemakers. In reverse order, the difference is even greater for positive attitude toward education, with a mean of 3.0979 and a standard deviation of .5550 for Black homemakers, and a mean of 2.7878 with a standard deviation of .6271 for Spanish American homemakers. To review, Caucasian homemakers indicate higher cell means for all four attitudes and nutrition knowledge. While indicating lower overall cell means for Black and Spanish American homemakers, the Black women indicate a more positive attitude toward education than indicated by Spanish American women, and, in turn, Spanish American homemakers indicate a more non-authoritarian parent role than indicated by Black homemakers.

The overall null hypothesis is rejected at a $P < .0001$.

CHAPTER VI

CONCLUSIONS, LIMITATIONS, AND IMPLICATIONS

In this chapter are discussed the conclusions of findings, limitations of the study, and implications for further research.

Conclusions of Findings

Reliability and Validity of Constructs

The Homemaker Interview Schedule (Appendix A) consists of 99 items. The last 25 items classified in the schedule as nutrition information were accepted as a construct for measuring nutrition knowledge, with the remaining 74 items assigned to the most appropriate operational definition for developing attitudinal constructs. These items as a test of reliability recorded an internal consistency of .9212. Individually, item-total correlations calculated coefficient alphas of .75, .76, .82, .71, and .71 for attitudes of managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education and nutrition knowledge. These tests of internal consistency, though not of high values, are statistically sufficient.

As for the validity of the constructs, alternative means for developing pools of statements need be considered. Validity of

statements could be increased by several methods. Items written in relation to generic types as operationally defined by a central-peripheral dimension or in relation to other theoretical bases would affect, considerably, the degree of validity. The most effective procedure, however, involves writing, testing, rewriting and retesting items for validity with control group subjects. Ambiguous, poorly discriminating and insufficient item-total correlations are thus eliminated. The necessity for pretesting items for validity seems imperative. While there is convergent validation with other logically related psychological constructs and some validation in relation to specific demographic characteristics verified by other studies (Eppright, 1970; Sims, 1971), the validity of the indices for measuring attitudes appears uncertain.

Inter-rater reliability of .71986 was calculated from the decisions of six judges in determining the polarity of statements formulating attitudinal constructs. The coefficients could have been augmented with an increase in numbers of judges.

Association Between Nutrition Knowledge and Attitudes

An overall F test of association between nutrition knowledge and attitudes toward managerial control, satisfying homemaker role, non-authoritarian parent role, and positive attitude toward education was significant at a $P < .0001$, based on a multivariate regression analysis, Table 9.

Of the univariate tests of association between nutrition

knowledge and attitudes, positive attitude toward education and non-authoritarian parent role were significant at the 99.9 level, with each degree of the latter association predicting .294 increase in nutrition knowledge score and explaining 9.281 percent of the total variance. Neither attitude toward managerial control nor attitude toward satisfying homemaker role predicted appreciable degrees of association for increases in nutrition knowledge or explained large percentages of the total variance.

Were one to expect a greater predictive association of nutrition knowledge from a positive attitude toward education, the items which formulate the education construct might be examined for their validity in measuring homemaker attitude toward the homemaker's own intellectual development as related to the acquisition of nutrition knowledge. Items formulating the construct, non-authoritarian parent role, should also be re-evaluated to ensure that only items related to child-feeding practices are included. These constructs could be refined through a procedure similar to that used by Cross and Kawash (page 16). Statements for measuring homemakers attitudes toward self might better be written in relation to the homemaker role as that role pertains to meal planning, food preparation and meal service.

Indices for measuring attitude toward management or internal control proved disappointing. Brim and associates (1962) Test of General Epistemological and Instrumental Beliefs might be considered. That test which was pretested on a large, heterogeneous sample is not only statistically reliable, but provision is made for attaining degrees of validity through the combination of objective and subjective

responses.

For estimates of homemakers nutrition knowledge, statements more closely identified with the operational definition, which emphasizes common essential foods included in the basic four food groups, carbohydrates and fats, and the effect of their intake upon one's health would be better indicators of knowledge. A need for re-evaluation of items chosen to derive a nutrition knowledge score is supported by Kerr (page 34) in her analysis of nutrition knowledge when correlated with educational attainment of homemakers.

Association Between Nutrition Knowledge, Attitudes and Characteristics

Two characteristics of homemakers, education and age, were significant as predictors of nutrition knowledge and attitudes at the 99.9 and 93.41 levels. With greater precision in the validity of items formulating the five constructs, these variables would predict associations to nutrition knowledge and attitudes of higher scores and greater degrees.

The .374 association between educational attainment of homemakers and positive attitude toward education is understandable in that the variables have a common focus. That education is not a better predictor of nutrition knowledge should be examined in light of the validity of statements designed for measuring nutrition knowledge.

While age of homemakers is statistically significant, the predictive association of nutrition knowledge and attitudes is negligible. The association between age and managerial control might be re-examined

for environmental factors.

Variables of family monthly income, number of children, size of household, number of financial sources received were not significant as predictors of nutrition knowledge and attitudes in a multivariate regression analysis. Income, however, might have been expected to be a better predictor of association with managerial control (Sims, 1971).

Rural, non-farm residence predicted significant associations between non-authoritarian parent role, .0012, and nutrition knowledge, .0091. This finding suggests that the difference in educational opportunities and exposure to nutrition information between urban and rural non-farm residents might be investigated. Are there, in fact, factors associated with authoritarian parent role and lower level nutrition knowledge scores as indicated by cell means of urban, lower socioeconomic homemakers?

Ethnic backgrounds predicted significant associations, .0001, for attitudes and nutrition knowledge. While Caucasian background registered larger mean scores for all five dependent variables; of smaller, but yet significant associations were Spanish American homemakers predicted association, .0001, of non-authoritarian parent role and Black homemakers predicted association, .0001, of positive attitude toward education. Ethnic background is a highly significant predictor, .0001, of both multivariate and univariate associations for nutrition knowledge and attitudes of homemakers.

Relationship Between Nutrition Knowledge, Attitudes and Characteristics

Significant relationships among nutrition knowledge, attitudes and characteristics of homemakers, as reported in order of decreasing correlations, are of interest (page 56). Some of these relationships are supported in a study (Eppright, 1970) of nutrition knowledge and attitudes of mothers, with significant findings reported at the .99 level.

In the Eppright and associates study, as in this current study, high level nutrition knowledge was positively related to rural homemakers, more education and higher income; although negatively related to permissiveness. Not knowing the item content of that permissiveness attitude construct, permissiveness and non-authoritarianism as variables should not be compared. Education of homemaker was positively related to non-authoritarianism. Again, the permissiveness of that study and the non-authoritarianism of this study may not be comparable. The concepts, permissiveness and non-authoritarianism, must be interpreted with reservation in either study.

Responses to Nutrition Knowledge and Attitude Statements

Mean scores for nutrition knowledge and attitudes of managerial control, satisfying homemaker role, non-authoritarian parent role, positive attitude toward education, and nutrition knowledge are reliable indices for evaluation in relation to educational programs for homemakers.

Positive attitude toward education, 3.092, and nutrition knowledge, 2.773, could be considered high scores. With increased validity of items formulating the nutrition knowledge construct, this mean of 2.773 might be increased. A mean of 2.234 for non-authoritarian parent role might be increased, as the items composing that construct are given greater precision with regard to child-feeding practices; and a mean of 2.326 for satisfying homemaker role may be increased, as those items are rewritten in relation to meal planning, preparation and service.

The attitude of managerial control with a mean of 2.568 would seem to have implications for educators. A feeling of powerlessness in relation to income is supported by Sims (1971) and is related also to other resources. More precise indices for measuring perceptions of management, in particular, remains a challenge to future investigators.

Homemaker Characteristics

Chi-square results are presented in association to homemaker and family characteristics. These characteristics were designed as variables of interest in the original Expanded Nutrition Study.

Three homemaker-family characteristic variables have multiple significant associations at the .98 level or above. Family monthly income related significantly at the .98 level or above to six homemaker indices. Age related significantly at the .99 level to five homemaker characteristics. Ethnic background, a variable found to be of considerable importance in this study, related at the .99 level or above

with five homemaker characteristics, except for number of financial sources at the .95 level.

Size of household, number of children, number of financial sources received, and residence of homemaker related significantly at the 99.9 level, with the exception of the relationship of sources to ethnic background at the .95 level. Education related negatively to age and positively to ethnic background at the 99.9 level. Discrete variables need post hoc tests for further clarification.

The eight independent variables are in themselves so interrelated as to generate levels of significance at a degree of seemingly great importance.

Limitations

1. The manner in which the sample was selected necessarily introduced bias into the study. Data were collected only from families referred to the expanded nutrition program and from homemakers willing to participate in the study. Little is known about those families choosing not to participate or failing to complete the second interview, even though a practice was followed of returning to the home on three occasions to obtain information.

2. While the chi-square tests of independence between homemaker characteristics is of interest, greater meaning could be derived from chi-square tests of "goodness of fit," using a technique of split-half sample compared with the population. The largest proportion of deprived families in Michigan are known to be Caucasian as represented in this study. To what extent these findings could be expected to occur among

families in the State is of empirical interest.

3. Poorly developed psychological constructs from the original attempt at computer generated clusters were differentiated from homemaker responses. Failure to differentiate exclusive categories may indicate failure on the part of the homemakers to understand the statements or to perceive the statements as meaningful.

4. Items of inquiry were categorized by the researcher according to the research problem to be mutually exclusive, though not independent, and derived from one classificatory principle based on theory. Had a panel of judges selected items for the classifications, content of the constructs would be further validated.

5. Multiple regression analysis, which enables the prediction of a value of one variable on a condition that prior information is available about the others, involves three or more variables, one of which is the dependent variable that is to be estimated on the basis of the values of all others. To have treated the five dependent, inter-related psychological constructs together in a multiple regression analysis may be unduly confounding.

Implications

Theory

Central-peripheral dimension as a heuristic theory is also a perceptive theory for better understanding the relativity of choice underlying the process of nutrition practices. This model would appear to have numerable implications for perceiving family management

practices in everyday living.

Research

This study explores a theory that may be applicable to many family settings. An approach to be used in constructing an attitudinal system for comparison within and between cultural groups of family decisionmakers.

Although several coefficients are significant, they are generally of small absolute value. The reason for these findings may be a result of the complexity of some of the variables, possibly poor discrimination among test items, and other problems inherent in collecting attitudinal responses from a large sample. Therefore, refinement of psychological constructs would be needed if the central-peripheral dimension is contemplated for other studies.

Action Program

The value of the present study to potential application in program implemented by change agents lies in the theoretical perspective, in the portent for investigating factors associated with choice of nutrition knowledge, and in the interdependent and interrelatedness of attitudes, nutrition knowledge and characteristics of homemakers which were revealed. The entire constellation of family attitudes, characteristics and knowledge must be evaluated more discretely before any predictions concluding nutrition change programs can be made with any degree of certainty.

APPENDICES

APPENDIX A

**Attitude Schedule and
Biological Data Schedule**

APPENDIX A

Attitude Schedule

Name of Respondent _____

Respondent ID _____

County _____

General Instructions: We are interested in knowing what you think or feel about some things. These are things that a lot of people have different ideas about. For example, you and your best friend may not agree about many of them, but it's important to us to know what you think about each one.

For each item, I'd like for you to say whether you agree or disagree and also how strongly you feel about it--for example, whether you strongly agree or mildly agree, strongly disagree or mildly disagree. I have some cards that have these different responses on them, so you can look at them while you think about each item and then show me which one is the closest to your opinion for that item. Here are the cards. (Present cards in the order SA-MA-MD-SD, labeling each as it is presented, so that the SA is on the respondent's left and the SD on her right.)

I'll also give you a copy of the questions so that you can follow while I read them if you'd like.

Let's try a sample item first. For example, if I gave you this statement--

Any parent should be proud to have a child who rarely cries.

--how would you respond to it? (Be sure that respondent indicates her response by pointing to a card and verbalizing the response, if possible, so that you are sure she understands the procedure. Clarify if necessary.)

Good. Are there any questions?



PART I

Nutritional Attitudes

Introduction: In this first section, we have some statements about family eating habits and nutrition. Remember--there are no right or wrong answers to these; we just want to know your opinion about these things.

- (1) SA MA MD SD Children will eat the right things if they can pick what they want to eat.
- (2) SA MA MD SD If a child drinks enough milk, his mother doesn't need to worry about nutrition.
- (3) SA MA MD SD The foods that children eat will have a big effect on their health in the future.
- (4) SA MA MD SD As long as children eat a lot, they will get all the vitamins and other nutrients they need.
- (5) SA MA MD SD It's all right for people to snack between meals.
- (6) SA MA MD SD A good mother should make her child eat what she thinks is best for him.
- (7) SA MA MD SD If children are not sick, it means they are eating the right foods.
- (8) SA MA MD SD Parents should let their children eat whatever they want.
- (9) SA MA MD SD Dessert always just adds extra calories but no other nutrients to a family's diet.
- (10) SA MA MD SD Children's foods have so many vitamins added to them that parents don't need to worry about their children's nutrition.
- (11) SA MA MD SD It is all right for children to choose their own food as long as they do not always pick the same thing.
- (12) SA MA MD SD Young children don't grow correctly if they eat the wrong foods.
- (13) SA MA MD SD Children should be able to choose what they want to eat for meal even if it means a little more work for the mother.
- (14) SA MA MD SD If children have plenty of liquids, their mothers don't need to worry about what they eat.
- (15) SA MA MD SD If a child doesn't like to eat breakfast, it is better to let him go without it than to start the day off with an argument.
- (16) SA MA MD SD Nutrition is one of the most important concerns a mother has for her family.
- (17) SA MA MD SD If a child wants a particular food to eat, it is important to let him have it.

- (18) SA MA MD SD As long as the doctor doesn't say anything to a mother about nutrition, she doesn't have to worry about it.
- (19) SA MA MD SD A child should always be made to eat everything on his plate.
- (20) SA MA MD SD Eating fruits and vegetables is important for children but doesn't make much difference for adults.

PART II

Child-Rearing Attitudes

Introduction: Now we'd like to know what you think about some statements about children, such as how parents should handle them. These are things people have many different opinions about, so remember that what we're interested in is what you really believe yourself.

- (1) SA MA MD SD A mother has a right to know everything going on in her child's life because her child is a part of her.
- (2) SA MA MD SD Children are basically either good or bad, and there isn't much that can be done about changing them.
- (3) SA MA MD SD Children pester you with all their little upsets if you aren't careful from the first.
- (4) SA MA MD SD Children must be told exactly what to do and how to do it or they will make mistakes.
- (5) SA MA MD SD Mothers sacrifice almost all their own fun for their children.
- (6) SA MA MD SD If parents are not strict about rules, children will misbehave and get into trouble.
- (7) SA MA MD SD Having to be with the children all the time gives a woman the feeling that she cannot get out.
- (8) SA MA MD SD A good mother should listen to her children whether she's interested in what they're saying or not.
- (9) SA MA MD SD It is natural for a mother to be relieved when her children start school.
- (10) SA MA MD SD A baby will be spoiled if he is picked up whenever he cries.
- (11) SA MA MD SD A child should not question the thinking of his parents.
- (12) SA MA MD SD Self sacrifice is one of the most desirable traits of a good mother.
- (13) SA MA MD SD Few men realize that a mother needs some fun in life too.
- (14) SA MA MD SD There is no good excuse for a child hitting another child.
- (15) SA MA MD SD A good mother will find enough social life within the family.
- (16) SA MA MD SD A mother should make it her business to know everything her children are thinking.
- (17) SA MA MD SD Most children are toilet trained by 15 months of age.
- (18) SA MA MD SD Children should be more considerate of their mothers since their mothers suffer so much for them.
- (19) SA MA MD SD A child who is "on the go" all the time will most likely be happy.

- (20) SA MA MD SD Some children are just so bad they must be taught to fear adults for their own good.
- (21) SA MA MD SD One of the worst things about taking care of a home is that a woman feels she can't get out.
- (22) SA MA MD SD A child's ideas should be seriously considered in making family decisions.
- (23) SA MA MD SD There is usually something wrong with a child who asks a lot of questions about sex.
- (24) SA MA MD SD Children will get on any woman's nerves if she has to be with them all day.
- (25) SA MA MD SD The sooner a child learns to walk the better he is trained.
- (26) SA MA MD SD A mother should do her best to avoid any disappointment for her child.
- (27) SA MA MD SD A child should be taught to avoid fighting no matter what happens.
- (28) SA MA MD SD Parents must earn the respect of their children by the way they act.
- (29) SA MA MD SD Mothers very often feel they can't stand their children a moment longer.
- (30) SA MA MD SD Children soon learn there is no greater wisdom than that of their parents.

PART III

General Social and Educational Attitudes

Introduction: Now I'm going to read some statements about some general things like education. Again, there aren't any right or wrong answers; we just want to know what you really think about these things.

- (1) SA MA MD SD A good education is the best way for people to improve the way they live.
- (2) SA MA MD SD If you want something done right, it is better to do it yourself.
- (3) SA MA MD SD The world is run by a few people in power, and there is not much anybody else can do about it.
- (4) SA MA MD SD There is not much that parents can do to improve the schools.
- (5) SA MA MD SD Most new ideas and ways of doing things are not as good as the old ones.
- (6) SA MA MD SD People with a lot of schooling enjoy life more than those with less schooling.
- (7) SA MA MD SD It is better to put your money into something that you know will be safe, even though you may not make as much money that way.
- (8) SA MA MD SD Most teachers are good examples for children.
- (9) SA MA MD SD It doesn't do much good to try to plan ahead because most things turn out to be a matter of luck anyway.
- (10) SA MA MD SD Much of the tax money spent on education during the past few years should have been spent for other things.
- (11) SA MA MD SD It is better to use your own judgment than to do what other people tell you.
- (12) SA MA MD SD A person can usually learn more on a job than he can in school.
- (13) SA MA MD SD It is very important for every family to keep some money saved for emergencies.
- (14) SA MA MD SD It is all right for parents to keep their children out of school if they are needed to help out at home.
- (15) SA MA MD SD Only basic subjects like reading, writing, and arithmetic should be taught at the taxpayer's expense.
- (16) SA MA MD SD The schools do not encourage a person to think for himself.
- (17) SA MA MD SD People often don't have enough control over what happens in their lives.

- (18) SA MA MD SD It is better for a person to finish high school even if he can get a job without it.
- (19) SA MA MD SD Most young people are getting more schooling than they really need.
- (20) SA MA MD SD In general, scientists have done more harm than good for this country.
- (21) SA MA MD SD The things a person learns in school are not very helpful in meeting the problems of real life.
- (22) SA MA MD SD Those who stick to the old ways of doing things get ahead faster.
- (23) SA MA MD SD The lot of the average man is getting worse, and there isn't anything that can be done about it.
- (24) SA MA MD SD An education is not really worth all the time and effort it requires.

PART IV

Nutrition Information

Information: In this last section, we have some more statements about food and eating habits. Again, these are things that different people have different ideas about, and we want to know which ones you believe are important and that you use in planning your family's meals.

- (1) SA MA MD SD Meat, milk, and eggs all have lots of nutrients which are needed for the growth of small children.
- (2) SA MA MD SD When children have enough food to satisfy their appetites, they are getting enough nutrients.
- (3) SA MA MD SD Gelatin desserts are a good source of protein.
- (4) SA MA MD SD It is better not to have orange juice and milk in the same meal because the orange juice causes the milk to curdle in the stomach.
- (5) SA MA MD SD Eating bacon for breakfast is a very good way to get the protein that is needed for the day.
- (6) SA MA MD SD School-age children need to have vitamin pills every day for good health.
- (7) SA MA MD SD A good easy way to lose weight is to skip breakfast.
- (8) SA MA MD SD Apples have a lot of Vitamin C.
- (9) SA MA MD SD Healthy, active young children need some sweets, such as candy or cake, each day for energy.
- (10) SA MA MD SD It is best to avoid eating milk and fish together.
- (11) SA MA MD SD Adding soda while cooking vegetables and dried beans makes them easier to digest.
- (12) SA MA MD SD Dried beans contain many of the same nutrients as meat.
- (13) SA MA MD SD Year-old babies should eat different kinds of foods, since drinking only milk may not be enough for growth.
- (14) SA MA MD SD White bread and cereals that are enriched are better for both children and adults than those that are not.
- (15) SA MA MD SD Eating cheese causes constipation.
- (16) SA MA MD SD It is important to eat many kinds of foods from day to day.
- (17) SA MA MD SD Adults should avoid fat in their diets in order to prevent heart diseases and strokes.
- (18) SA MA MD SD Milk is needed mainly by infants and growing children.
- (19) SA MA MD SD Lemonade and orange juice have about the same amounts of Vitamin C.
- (20) SA MA MD SD Peanut butter is a nutritious food for both children and adults.

- (21) SA MA MD SD Most fat children and adults have a problem with their glands.
- (22) SA MA MD SD A reducing diet should not contain bread or potatoes.
- (23) SA MA MD SD Skim milk has about the same amount of minerals and protein as whole milk.
- (24) SA MA MD SD Eating carrots helps a person see better.
- (25) SA MA MD SD If a person drinks enough orange juice, he won't get a cold.

Biological Data Schedule

Permission--Proof of Home Call

The Expanded Nutrition Evaluation Project has been explained to me.

I am willing to participate and have members of my family participate in the project.

I understand that I will be interviewed at agreed upon times, that my young children (if I have any) may be weighed and measured, and we will be asked to supply urine samples.

Homemaker

Aide

Date

BIOLOGICAL DATA

County Code _____

Family ID Number _____

Part I. General Family Information

Date aides first visit _____

Check for residence location: _____ no information

_____ urban

_____ rural non-farm

_____ farm

_____ other

Check for aid recieved by family: _____ no information

Yes No

_____ USDA Food Stamps

_____ USDA/FHA Assistance

_____ Welfare

_____ Social Security

_____ Other (specify) _____

Total family income for last month (dollars) _____

Does family have a garden? _____ yes _____ no.

Part II. Homemaker Information

Homemaker's age _____

Check for education of homemaker: _____ no information

_____ 8th grade or less

_____ 9-12 grade

_____ beyond high school

_____ other (specify)

BIOLOGICAL DATA

County Code _____

Family ID Number _____

Part II. (continued)

Check for background of homemaker:

_____ no information	_____ Oriental
_____ Caucasian	_____ American Indian
_____ Negro	_____ Other (specify) _____
_____ Spanish American	_____

Check for homemaker:

_____ no information	_____ pregnant
_____ non-pregnant	_____ lactating

Homemaker's 24-hour Food Recall (record actual number of servings)

_____ no information	_____ fruit-vegetable group
_____ meat group	_____ bread-cereal group
_____ milk group	

Check for equipment available: _____ no information

<u>Yes</u>	<u>No</u>	
_____	_____	Stove/range
_____	_____	Oven
_____	_____	Hot plate
_____	_____	Electric frying pan
_____	_____	Freezer
_____	_____	Refrigerator
_____	_____	Ice box
_____	_____	Electricity
_____	_____	Running water
_____	_____	Other (specify) _____

BIOLOGICAL DATA

County Code _____

Family ID Number _____

Part III. Family Interview

Date _____

Time of day _____

Number of prior aide visits to family _____

Has anyone in your family been taking vitamin pills in
the last week or so?

_____ no information

_____ no

_____ yes

If so, who has been taking the vitamin pills? _____ no information

<u>Yes</u>	<u>No</u>
_____	_____
_____	_____
_____	_____
_____	_____

Pre-school children (ages 0-5)

School-age children (ages 6-12)

Teen(s) (ages 13-18)

Adult(s) (19 and over)

Who does the grocery shopping for your family most of the time?

_____ no information

_____ children

_____ mother

_____ other relative

_____ father

_____ non-relative

Where do you (or other person) usually shop for your groceries?

_____ no information

_____ specialty food store

_____ supermarket

_____ other (specify) _____

_____ small neighborhood store _____

BIOLOGICAL DATA

County Code _____

Family ID Number _____

Part III. (continued)

How far away from your home is this store?

_____ no information _____ 1-5 miles
_____ less than 1 mile _____ 6 miles or more

How do you usually get to the store?

_____ no information
_____ family car
_____ neighbor, friend, relative drives their car
_____ walk
_____ bus
_____ taxi
_____ bicycle
_____ other (specify) _____

Is there any other store where you occasionally buy groceries?

_____ no information _____ small neighborhood store
_____ supermarket _____ specialty food store
_____ other (specify) _____

BIOLOGICAL DATA

County Code _____

Family ID Number _____

Part III. (continued)

When you go grocery shopping, there are many, many different kinds of food you could buy. What kinds of things help you decide what to buy? (Record 2 responses)

_____ no information

_____ cost--whether I can afford it

_____ I or someone in my family likes it

_____ it is on my grocery list

_____ I am out of it or need it for something special

_____ it is on sale

_____ it is easy to prepare--convenient

_____ it is a new product someone wanted to try

_____ it is good for us--nutrition

_____ it is in season

_____ it is a specific brand

_____ other (specify) _____

APPENDIX B

**Attitude and Nutrition Knowledge
Constructs**

APPENDIX B

Attitude and Nutrition Knowledge Constructs

Management;

- 22 Children are basically either good or bad, and there is not much that can be done about changing them.
- 52* If you want something done right, it is better to do it yourself.
- 53 The world is run by a few people in power, and there is not much anybody else can do about it.
- 55* Most new ideas and ways of doing things are not as good as the old ones.
- 59 It does not do much good to try to plan ahead because most things turn out to be a matter of luck anyway.
- 67 People often do not have enough control over what happens in their lives.
- 72* Those who stick to the old ways of doing things get ahead faster.
- 73 The lot of the average men is getting worse, and there is nothing that can be done about it.

Homemaker Role:

- 23 Children pester you with all their little upsets if you are not careful from the first.
- 25 Mothers sacrifice almost all their own fun for their children.
- 27 Having to be with the children all the time gives a woman the feeling that she cannot get out.
- 29* It is natural for a mother to be relieved when her children start school.

*Items reflected for scoring

- 32* Self-sacrifice is one of the most desirable traits of a good mother.
- 33 Few men realize that a mother needs some fun in life too.
- 35 A good mother will find enough social life within the family.
- 38 Children should be more considerate of their mothers since their mothers suffer so much for them.
- 41 One of the worst things about taking care of a home is that a woman feels she cannot get out.
- 44 Children will get on any woman's nerves if she has to be with them all day.
- 46 A mother should do her best to avoid any disappointment for her child.

Parent Role:

- 1* Children will eat the right things if they can pick what they want to eat.
- 8* Parents should let their children eat whatever they want.
- 11* It is all right for children to choose their own food as long as they do not always pick the same thing.
- 13* Children should be able to choose what they want to eat for meals even if it means a little more work for the mother.
- 15* If a child does not like to eat breakfast, it is better to let him go without it than to start the day off with an argument.
- 17* If a child wants a particular food to eat, it is important to let him have it.
- 19 A child should always be made to eat everything on his plate.
- 21 A mother has a right to know everything going on in her child's life because her child is a part of her.
- 24 Children must be told exactly what to do and how to do it or they will make mistakes.
- 26 If parents are not strict about rules, children will misbehave and get into trouble.

- 30 A baby will be spoiled if he is picked up whenever he cries.
- 31 A child should not question the thinking of his parents.
- 34 There is no good excuse for a child hitting another child.
- 36 A mother should make it her business to know everything her children are thinking.
- 37 Most children are toilet trained by 15 months of age.
- 39* A child who is "on the go" all the time will most likely be happy.
- 40 Some children are just so bad they must be taught to fear adults for their own good.
- 43 There is usually something wrong with a child who asks a lot of questions about sex.
- 45 The sooner a child learns to walk the better he is trained.
- 47 A child should be taught to avoid fighting no matter what happens.
- 50 Children soon learn there is no greater wisdom than that of their parents.

Education:

- 54 There is not much that parents can do to improve the schools.
- 60 Much of the tax money spent on education during the past few years should have been spent for other things.
- 65 Only basic subjects like reading, writing, and arithmetic should be taught at the taxpayer's expense.
- 66 The schools do not encourage a person to think for himself.
- 69 Most young people are getting more schooling than they really need.
- 70 In general, scientists have done more harm than good for this country.
- 71 The things a person learns in school are not very helpful in meeting the problems of real life.

*Items reflected for scoring

- 74 An education is not really worth all the time and effort it requires.

Nutrition Knowledge:

- 75* Meat, milk, and eggs all have lots of nutrients which are needed for the growth of small children.
- 76 When children have enough food to satisfy their appetites, they are getting enough nutrients.
- 77 Gelatin desserts are good source of protein.
- 78 It is better not to have orange juice and milk in the same meal because the orange juice causes the milk to curdle in the stomach.
- 79 Eating bacon for breakfast is a very good way to get the protein that is needed for the day.
- 80 School-age children need to have vitamin pills every day for good health.
- 81 A good easy way to lose weight is to skip breakfast.
- 82 Apples have a lot of Vitamin C.
- 83 Healthy, active young children need some sweets, such as candy or cake, each day for energy.
- 84 It is best to avoid eating milk and fish together.
- 85 Adding soda while cooking vegetables and dried beans makes them easier to digest.
- 86* Dried beans contain many of the same nutrients as meat.
- 87* Year-old babies should eat different kinds of foods, since drinking only milk may not be enough for growth.
- 88* White bread and cereals that are enriched are better for both children and adults than those that are not.
- 89 Eating cheese causes constipation.
- 90* It is important to eat many kinds of foods from day to day.
- 91 Adults should avoid fat in their diets in order to prevent heart diseases and strokes.

*Items reflected for scoring

- 92* Milk is needed mainly by infants and growing children.
- 93 Lemonade and orange juice have about the same amounts of Vitamin C.
- 94* Peanut butter is a nutritious food for both children and adults.
- 95 Most fat children and adults have a problem with their glands.
- 96 A reducing diet should not contain bread or potatoes.
- 97* Skim milk has about the same amount of minerals and protein as whole milk.
- 98* Eating carrots helps a person see better.
- 99 If a person drinks enough orange juice, he won't get a cold.

Unclassified:

- 2 If a child drinks enough milk, his mother doesn't need to worry about nutrition.
- 3 The foods that children eat will have a big effect on their health in the future.
- 4 As long as children eat a lot, they will get all the vitamins and other nutrients they need.
- 5 It's all right for people to snack between meals.
- 6 A good mother should make her child eat what she thinks is best for him.
- 7 If children are not sick, it means they are eating the right foods.
- 9 Dessert always just adds extra calories but no other nutrients to a family's diet.
- 10 Children's foods have so many vitamins added to them that parents don't need to worry about their children's nutrition.
- 12 Young children don't grow correctly if they eat the wrong foods.
- 14 If children have plenty of liquids, their mothers don't need to worry about what they eat.

*Items reflected for scoring

- 16 Nutrition is one of the most important concerns a mother has for her family.
- 18 As long as the doctor doesn't say anything to a mother about nutrition, she doesn't have to worry about it.
- 20 Eating fruits and vegetables is important for children but doesn't make much difference for adults.
- 28 A good mother should listen to her children whether she's interested in what they're saying or not.
- 42 A child's ideas should be seriously considered in making family decisions.
- 48 Parents must earn the respect of their children by the way they act.
- 49 Mothers very often feel they can't stand their children a moment longer.
- 51 A good education is the best way for people to improve the way they live.
- 56 People with a lot of schooling enjoy life more than those with less schooling.
- 57 It is better to put your money into something that you know will be safe, even though you may not make as much money that way.
- 58 Most teachers are good examples for children.
- 61 It is better to use your own judgment than to do what other people tell you.
- 62 A person can usually learn more on a job than he can in school.
- 63 It is very important for every family to keep some money saved for emergencies.
- 64 It is all right for parents to keep their children out of school if they are needed to help out at home.
- 68 It is better for a person to finish high school even if he can get a job without it.

APPENDIX C

Inter-rater Reliability Profiles

APPENDIX C

Inter-rater Reliability Profiles

Bipolar Attitudinal Continuums

Measure for Estimating Inter-rater Reliability

Constructs	Raters					
	1	2	3	4	5	6
Management: SA(1) = Fate						
22	C	C	F	F	F	F
52*	C	C	C	C	C	C
53	F	F	F	F	C	F
55*	C	C	F	F	C	C
59	C	F	F	F	F	F
67	F	F	F	F	F	F
72*	C	C	F	C	C	C
73	F	F	F	F	F	F
Homemaker Role: SA(1) = Unsatisfactory						
23	S	S	U	U	U	U
25	U	U	U	U	U	U
27	U	U	U	U	U	U
29*	U	S	S	S	S	U
32*	S	S	U	U	S	S
33	U	S	U	U	U	U
35	U	U	U	U	S	S
38	S	U	U	U	U	U
41	U	U	U	U	U	U
44	U	U	U	S	U	U
46	U	U	U	U	S	S
Parent Role: SA(1) = Authoritarian						
1*	Pr	Pr	Pr	Pr	Pr	Pr
8*	Pr	Pr	Pr	Pr	Pr	Pr
11*	Pr	Pu	Pr	Pr	Pr	Pu
13*	Pr	Pu	Pr	Pr	Pr	Pr
15*	Pr	Pr	Pr	Pr	Pr	Pr
17*	Pr	Pr	Pr	Pr	Pr	Pr
19	Pu	Pu	Pu	Pu	Pu	Pu
21	Pu	Pr	Pu	Pu	Pu	Pu

*Items reflected for scoring

Constructs	Raters					
	1	2	3	4	5	6
Parent Role: (continued)						
24	Pu	Pu	Pu	Pu	Pu	Pu
26	Pu	Pu	Pu	Pu	Pu	Pu
30	Pu	Pr	Pu	Pu	Pu	Pu
31	Pu	Pu	Pu	Pu	Pu	Pu
34	Pu	Pu	Pu	Pu	Pu	Pu
36	Pu	Pr	Pu	Pu	Pu	Pu
37	Pu	Pu	Pu	Pu	Pr	Pu
39*	Pr	Pr	Pu	Pr	Pr	Pr
40	Pu	Pu	Pu	Pu	Pu	Pu
43	Pu	Pu	Pu	Pu	Pu	Pr
45	Pr	Pu	Pu	Pu	Pu	Pu
47	Pu	Pu	Pu	Pu	Pu	Pu
50	Pu	Pu	Pu	Pu	Pu	Pu

Education: SA(1) = Negative

54	N	N	N	N	N	N
60	N	N	N	N	N	N
65	N	N	N	N	N	N
66	N	P	N	N	P	N
69	N	P	N	N	N	N
70	N	P	N	N	N	N
71	N	P	N	N	N	N
74	N	N	N	N	N	N

Criteria for Scoring

Constructs	Range			
	SA(1)	MA(2)	MD(3)	SD(4)
Management	Fate			Control
Homemaker Role	Unsatisfactory			Satisfactory
Parent Role	Authoritarian		Non-authoritarian	
Education	Negative			Positive

APPENDIX D

Homemaker Responses to Statements

APPENDIX D

Homemaker Responses to Statements

Profile of Constructs

Attitude Statements	<u>Number of Homemakers</u>	<u>Percentage of Homemakers</u>
<u>Managerial Control</u>		
22 Children are basically either good or bad, and there isn't much that can be done about changing them.	35	12.82
	35	12.82
	48	17.58
	155	56.78
52* If you want something done right, it is better to do it yourself.	12	4.40
	46	16.85
	70	25.64
	145	53.11
53 The world is run by a few people in power, and there is not much anybody else can do about it.	76	27.84
	54	19.78
	69	25.27
	74	27.11
55* Most new ideas and ways of doing things are not as good as the old ones.	66	24.18
	91	33.33
	72	26.37
	44	16.12
59 It doesn't do much good to try to plan ahead because most things turn out to be a matter of luck anyway.	66	24.18
	60	21.98
	73	26.74
	74	27.11
67 People often don't have enough control over what happens in their lives.	74	27.11
	86	31.50
	67	24.54
	46	16.85
72* Those who stick to the old ways of doing things get ahead faster.	99	36.26
	106	38.83
	40	14.65
	98	10.26

*Items reflected for scoring

Attitude Statements		Number of <u>Homemakers</u>	Percentage of <u>Homemakers</u>
<u>Managerial Control</u>			
73	The lot of the average man is getting worse, and there isn't anything that can be done about it.	58 49 82 84	21.25 17.95 30.04 30.77
<u>Satisfying Homemaker Role</u>			
23	Children pester you with all their little upsets if you aren't careful from the first.	108 80 51 34	39.56 29.30 18.68 12.45
25	Mothers sacrifice almost all their own fun for their children.	106 46 58 63	38.83 16.85 21.25 23.08
27	Having to be with the children all the time gives a woman the feeling that she cannot get out.	75 74 63 61	27.47 27.11 23.08 22.34
29*	It is natural for a mother to be relieved when her children start school.	35 42 85 111	12.82 15.38 31.14 40.66
32*	Self-sacrifice is one of the most desirable traits of a good mother.	19 38 77 139	6.96 13.92 28.21 50.92
33	Few men realize that a mother needs some fun in life too.	184 56 21 12	67.40 20.51 7.69 4.40
35	A good mother will find enough social life within the family.	102 70 56 45	37.36 25.64 20.51 16.48

*Items reflected for scoring.

Attitude Statements	Number of Homemakers	Percentage of Homemakers
<u>Satisfying Homemaker Role</u>		
38 Children should be more con- siderate of their mothers since their mothers suffer so much for them.	87 84 57 45	31.87 30.77 20.88 16.48
41 One of the worst things about taking care of a home is that a woman feels she can't get out.	36 53 81 103	13.19 19.41 29.67 37.73
44 Children will get on any woman's nerves if she has to be with them all day.	102 79 52 40	37.36 28.94 19.05 14.65
46 A mother should do her best to avoid any disappointment for her child	106 72 62 33	38.83 26.37 22.71 12.09
<u>Non-authoritarian Parent Role</u>		
1* Children will eat the right things if they can pick what they want to eat.	141 43 41 48	51.65 15.75 15.02 17.58
8* Parents should let their children eat whatever they want.	209 38 21 5	76.56 13.92 7.69 1.83
11* It is all right for children to choose their own food as long as they do not always pick the same thing.	87 93 64 29	31.87 34.07 23.44 10.62
13* Children should be able to choose what they want to eat for meals even if it means a little more work for the mother.	103 60 69 41	37.73 21.98 25.27 15.02
15* If a child doesn't like to eat break- fast, it is better to let him go with- out it than to start the day off with an argument.	181 47 27 18	66.30 17.22 9.89 6.59

*Items reflected for scoring.

Attitude Statements	<u>Number of</u> <u>Homemakers</u>		<u>Percentage of</u> <u>Homemakers</u>
	<u>Non-authoritarian Parent Role</u>		
17* If a child wants a particular food to eat, it is important to let him have it.	53		19.41
	78		28.57
	110		40.29
	32		11.72
19 A child should always be made to eat everything on his plate.	72		26.37
	68		24.91
	85		31.14
	48		17.58
21 A mother has a right to know everything going on in her child's life because her child is a part of her.	162		59.34
	45		16.48
	45		16.48
	21		7.69
24 Children must be told exactly what to do and how to do it or they will make mistakes.	133		48.72
	54		19.78
	51		18.68
	35		12.82
26 If parents are not strict about rules, children will misbehave and get into trouble.	166		60.81
	51		18.68
	33		12.09
	23		8.42
30 A baby will be spoiled if he is picked up whenever he cries.	166		60.81
	39		14.29
	36		13.19
	32		11.72
31 A child should not question the thinking of his parents.	64		23.44
	63		23.08
	88		32.23
	58		21.25
34 There is no good excuse for a child hitting another child.	57		20.88
	49		17.95
	101		37.00
	66		24.18
36 A mother should make it her business to know everything her children are thinking.	62		22.71
	74		27.11
	85		31.14
	52		19.05
37 Most children are toilet trained by 15 months of age.	67		24.54
	62		22.71
	73		26.74
	71		26.01

*Items reflected for scoring.

Attitude Statements	<u>Number of Homemakers</u>	<u>Percentage of Homemakers</u>
<u>Non-authoritarian Parent Role</u>		
39* A child who is "on the go" all the time will most likely be happy.	74	27.11
	87	31.87
	50	18.32
	62	22.71
40 Some children are just so bad they must be taught to fear adults for their own good.	39	14.29
	38	13.92
	36	13.19
	160	58.61
43 There is usually something wrong with a child who asks a lot of questions about sex.	24	8.79
	23	8.42
	88	32.23
	138	50.55
45 The sooner a child learns to walk the better he is trained.	95	34.80
	69	25.27
	62	22.71
	47	17.22
47 A child should be taught to avoid fighting no matter what happens.	70	25.64
	50	18.32
	96	35.16
	57	20.88
50 Children soon learn there is no greater wisdom than that of their parents.	104	38.10
	84	30.77
	55	20.15
	30	10.99
<u>Positive Attitude Toward Education</u>		
54 There is not much that parents can do to improve the schools.	28	10.26
	34	12.45
	69	25.27
	142	52.01
60 Much of the tax money spent on education during the past few years should have been spent for other things.	33	12.09
	37	13.55
	76	27.84
	127	46.52
65 Only basic subjects like reading, writing, and arithmetic should be taught at the taxpayer's expense.	17	6.23
	45	16.48
	56	20.51
	155	56.78

*Items reflected for scoring.

Attitude Statements	<u>Number of Homemakers</u>	<u>Percentage of Homemakers</u>
<u>Positive Attitude Toward Education</u>		
66 The schools do not encourage a person to think for himself.	29 49 89 106	10.62 17.95 32.60 38.83
69 Most young people are getting more schooling than they really need.	21 27 57 168	7.69 9.89 20.88 61.54
70 In general, scientists have done more harm than good for this country.	32 45 74 122	11.72 16.48 27.11 44.69
71 The things a person learns in school are not very helpful in meeting the problems of real life.	37 56 94 86	13.55 20.51 34.43 31.50
74 An education is not really worth all the time and effort it requires.	16 20 36 201	5.86 7.33 13.19 73.63
<u>High-Level Nutrition Knowledge</u>		
75* Meat, Milk, and eggs all have lots of nutrients which are needed for the growth of small children.	252* 19 2 0	92.31* 6.96 .73
76 When children have enough food to satisfy their appetites, they are getting enough nutrients.	56 52 75 90	20.51 19.05 27.47 32.97
77 Gelatin desserts are a good source of protein.	104 105 42 22	38.10 38.46 15.38 8.06

*Items reflected for scoring.

Attitude Statements		<u>Number of Homemakers</u>	<u>Percentage of Homemakers</u>
<u>High Level Nutrition Knowledge</u>			
78	It is better not to have orange juice and milk in the same meal because the orange juice causes the milk to curdle in the stomach.	41	15.02
		45	16.48
		87	31.87
		100	36.63
79	Eating bacon for breakfast is a very good way to get the protein that is needed for the day.	95	34.80
		89	32.60
		58	21.25
		31	11.36
80	School-age children need to have vitamin pills every day for good health.	110	40.29
		64	23.44
		68	24.91
		31	11.36
81	A good easy way to lose weight is to skip breakfast.	22	8.06
		15	5.49
		43	15.75
		193	70.70
82	Apples have a lot of Vitamin C	96	35.16
		90	32.97
		54	19.78
		33	12.09
83	Healthy, active young children need some sweets, such as candy or cake, each day for energy.	58	21.25
		94	34.43
		70	25.64
		51	18.68
84	It is best to avoid eating milk and fish together.	30	10.99
		40	14.65
		102	37.36
		101	37.00
85	Adding soda while cooking vegetables and dried beans makes them easier to digest.	36	13.19
		84	30.77
		98	35.90
		55	20.15
86*	Dried beans contain many of the same nutrients as meat.	98*	35.90*
		96	35.16
		59	21.61
		20	7.33

*Items reflected for scoring.

Attitude Statements	Number of Homemakers	Percentage of Homemakers
<u>High Level Nutrition Knowledge</u>		
87* Year-old babies should eat different kinds of foods, since drinking only milk may not be enough for growth.	244* 22 2 5	89.38* 8.06 .73 1.83
88* White bread and cereals that are enriched are better for both children and adults than those that are not.	161* 76 26 10	58.97* 27.84 9.52 3.66
89 Eating cheese causes constipation.	70 86 74 43	25.64 31.50 27.11 15.75
90* It is important to eat many kinds of foods from day to day.	193* 63 13 4	70.70* 23.08 4.76 1.47
91 Adults should avoid fat in their diets in order to prevent heart diseases and strokes.	151 82 27 13	55.31 30.04 9.89 4.76
92* Milk is needed mainly by infants and growing children.	104 40 44* 85	38.10 14.65 16.12* 31.14
93 Lemonade and orange juice have about the same amounts of Vitamin C.	78 108 64 23	28.57 39.56 23.44 8.42
94* Peanut butter is a nutritious food for both children and adults.	168* 77 19 9	61.54* 28.21 6.96 3.30
95 Most fat children and adults have a problem with their glands.	80 72 68 53	29.30 26.37 24.91 19.41

*Items reflected for scoring.

Attitude Statements		<u>Number of Homemakers</u>	<u>Percentage of Homemakers</u>
<u>High Level Nutrition Knowledge</u>			
96	A reducing diet should not contain bread or potatoes.	97	35.53
		54	19.78
		80	29.30
		42	15.38
97*	Skim milk has about the same amount of minerals and protein as whole milk.	72*	26.37*
		72	26.37
		60	21.98
		69	25.27
98*	Eating carrots helps a person see better.	89	32.60
		75*	27.47*
		49	17.95
		60	21.98
99	If a person drinks enough orange juice, he won't get a cold.	23	8.42
		49	17.95
		90	32.97
		111	40.66

*Item reflected for scoring.

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