An Exploratory Analysis of the Restaurant Dining Patterns of Older Adults

by

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(ABSTRACT)

The main objective of this study was to describe the restaurant dining patterns of a representative random sample of adults 65 years of age and older and to evaluate the impact that their health concerns and special diets have on their restaurant dining patterns. In addition, the specific features of foodservice products and services that are important to aged individuals when selecting a restaurant were examined.

The phrase '*dining patterns* ' refers to both *food intake* (the specific foods consumed) and individual *consumption patterns* (time, frequency, location of meals, and dining companions). Four different measures were used to quantify *food intake*: (1) entree items most often selected; (2) preferred method of preparation; (3) frequency of dessert purchases; and (4) type of dessert most often selected. *Consumption patterns* were quantified as: (1) type of restaurant patronized for each meal period; (2) frequency of restaurant visits per meal period; (3) dollar value of purchases per meal period; and (4) restaurant dining companions.

A mail survey of 1000 adults age 65 and older, was conducted in order to obtain information about the restaurant menu selections and consumption patterns of aged individuals living in the Commonwealth of Virginia. The sample yielded 303 usable responses for a response rate of 30.3%. Approximately 31% of the individuals in the sample indicated that they were following some type of special therapeutic diet and

37.3% of the group believed that their health concerns influenced their choice of restaurants when dining out.

Statistical analyses of the data revealed that there were several significant relationships between the socio-demographic characteristics of the respondents and their restaurant dining patterns. In addition, it was determined that the menu selections of the respondents with health concerns or on special diets were influenced by their nutritional concerns. With one exception, the consumption patterns of the respondents did not differ significantly. The individuals who indicated that their health concerns influenced their choice of restaurants did not spend as much on their dinner meals as did the individuals in the rest of the sample.

The availability of menu items appropriate for special diets was very important to the respondents on special diets or whose health concerns influenced their choice of restaurants. Further comparisons of the importance ratings, revealed that the respondents with health concerns rated all of the restaurant features, with the exception of two, as significantly higher in importance than the individuals in the "unconcerned" group. The sanitation and cleanliness of the foodservice facility and prompt courteous service were rated as highly important features by all of the individuals in the sample.

This study has shown that nutritional issues influence the restaurant dining patterns of some older consumers. In addition, there are some specific features of foodservice facilities which are particularly important to adults over 65 years of age when selecting a restaurant to patronize. As the segment of the U.S. population over 65 years of age continues to grow, operators in the foodservice industry need to become more attuned to the needs of their aged customers.

DEDICATION

This thesis is lovingly dedicated to my parents Ann and Don Logsdon. Their endless love and encouragement have made all things possible for me! My father, a very dedicated physician and researcher, was an inspiration to me throughout every step of this study. Regrettably, he was not able to critique the final draft of this research. His life came to a very sudden and tragic end as the result of an automobile accident on August 19, 1991. I have missed him terribly and I can only hope that he would have been pleased with my efforts.

ACKNOWLEDGEMENTS

I am deeply grateful to a number of individuals who have assisted me with this research endeavor. First, I would like to express my sincerest gratitude to Dr. Mahmood Khan for his support and guidance throughout my graduate studies and especially with this thesis. In addition, I wish to thank my other committee members, Dr. Eliza C. Y. Tse and Dr. L. Janette Taper whose thoughtful suggestions and careful evaluation of the research have contributed to the success of the project. I am also very grateful to Dr. Robert Frary of Virginia Tech and Dr. Richard Kryscio from the University of Kentucky, for their assistance with the statistical analysis of the data.

Special thanks go to Dr. Michael Olsen for giving me the opportunity to study at Virginia Tech and for encouraging me to pursue my interests in Hotel, Restaurant, and Institutional Management.

Many of my fellow graduate students also helped to "educate" me about the proper balance between work and play and I am especially grateful to Gerard Jorna, Clare Elwood, and Kathie Loccisano for their loving friendship. And, many thanks to my brother Kent, the chef who has learned to humor my requests for gourmet meals made without butter. Finally, my most heartfelt thanks go to Nigel Davis whose encouragement, optimism and patience have played an essential role in my life.

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CHAPTER I

INTRODUCTION

PROBLEM STATEMENT

Individuals over 65 years of age represent the fastest growing segment of the U.S. population and this "graying" of our nation has become an important issue for the future of American society. By the year 2030, approximately 64.5 million Americans will be at least 65 years of age, representing 22% of the total U.S. population (Aging America, 1988). This is an increase of 108% over the current figure of 31 million. Consequently, aged individuals are becoming an increasingly powerful segment of the U.S. population. The number of programs, special interest groups and industries that have evolved in order to serve the growing number of Americans over 65 continues to increase. However, corporate America's discovery of the "mature consumer" has been a mixed blessing for elderly population. While some aged individuals have benefited from the increased attention, others have felt neglected or misunderstood due to the public's ignorance and erroneous ideas about what it is like to get older.

Contrary to popular belief, Americans over 65 years of age are not a homogeneous group. Age, ethnicity, educational background, economic status and health are just a few of the variables that contribute to the diversity of this group. Current research suggests that efforts to capture and develop this segment of the population may unintentionally reinforce misleading stereotypes of older adults and promote age-separatist policies (Minkler, 1989). Moreover, extensive marketing and advertising campaigns sell the concept of "youth" to everyone in all aspects of life, thereby fostering a negative image of the aging population.

As the segment of the U.S. population over 65 years of age continues to grow, operators in the foodservice industry will find that older adults represent an increasing

proportion of their customer base. To date, very little empirical research has been c towards analyzing the dining patterns of older adults when they eat in commercial facil away from home. In order to better accommodate the growing number of individuals ove 65 years of age, operators in the foodservice industry need to know more about the physiological, psycho-social and lifestyle factors that influence the food intake of aged individuals. To date, most of the research conducted by the foodservice industry has focused upon younger individuals, specifically those between 20-40 years of age.

PURPOSE AND SCOPE

The purpose of this research endeavor was to determine how various factors associated with aging influence the dining patterns of older adults (65+ years of age) when dining away from home. More precisely, this study was designed to investigate the impact that physiological, psycho-social, and lifestyle factors have on the decisions of elderly individuals when they select their meals from a limited number of items on a restaurant menu. Survey data were collected and used to describe the dining patterns of a sample of older adults and to determine if their health concerns (and/or therapeutic diets) impact their food related behaviors. In addition, the specific features of foodservice establishments that are important to elderly individuals who follow therapeutic diets and/or have specific health concerns were identified.

Throughout this research endeavor the phrase *dining patterns* was used to refer to both food intake (the specific foods consumed) and consumption patterns (the time, frequency, location of meals, and dining companions). The terms 'eating out,' 'dining out,' and 'restaurant dining' will be used to describe the experience of consuming a meal away from home in a commercial foodservice establishment.

JUSTIFICATION

As the intensity of the competition in the foodservice industry continues to increase, operators are anxiously looking for ways to ensure their future survival. Demographic projections concerning the growing number of older adults, have led many operators to believe that individuals over 65 years of age represent an untapped segment of the market that may be important for future growth. In addition, some research has shown that restaurant usage by older adults is increasing. According to the National Restaurant Association (N.R.A.), total restaurant visits by adults over 65 increased by 14% as opposed to an overall increase of 11% for the total population between 1982 and 1986 (N.R.A., 1988). Consequently, foodservice operators have been interested in learning more about the dining patterns of aged individuals. At this time however, relatively little is known about the menu selection patterns and dining-out behaviors of aged individuals.

There are numerous physiological, psycho-social and lifestyle factors associated with aging which may influence the dining patterns of older adults. For example, ailments such as osteoarthritis, failing vision and tooth loss may influence mobility and make it difficult for elderly individuals to continue to eat as they did when they were younger. Frequency of eating and specific times of consumption in relation to place and personal association may also be affected by the aging process (Slesinger, McDivitt, & O'Donnell, 1980). Decreased sensory acuity coupled with chronic disease related symptoms can interfere with one's enjoyment of meals. It has been estimated that some 18-43% of adults over 65 years of age are following some type of special diet as a part of their treatment for conditions such as diabetes, cardiovascular disease and hypercholesterolemia (Schlenker, 1984). Research also suggests that weight reduction is the most common problem cited among elderly individuals, who have been referred for nutritional counseling (Schlenker,

1984). Prescription drug use is also higher among the elderly and some medications can influence appetite and/or taste perceptions.

Much of the published research describing the eating behaviors of older adults has been based upon small samples of aged individuals and/or specific population groups (Bedell & Shackleton, 1989; Betts & Vivian, 1984; Brown, 1976; Clarke & Wakefield, 1975; Fanelli & Abernethy, 1986; Grotkowski & Sims, 1978; Holt, Nordstrom & Kohrs, 1988; Hunter & Linn, 1979; Krondl, Lau, Yurkiw, & Coleman, 1982; Madeira & Goldman, 1988; Pierce, Hodges, Merz, & Olivey, 1987; Slesinger et al., 1980; Templeton, 1978). Consequently, many of these studies do not capture the diversity of the population over 65 years of age, nor do they recognize the increasing number of older adults who enjoy dining out in restaurants. According to a survey conducted by the National Restaurant Association, individuals 55-65 years of age, eat out on average three meals per week and individuals over 65, eat 1.8 restaurant meals per week (Conroy, 1986). While several authors, including the National Restaurant Association (1988) have attempted to describe the dining patterns of consumers over 65 years of age, there is relatively little empirical data upon which to base their recommendations (Conroy, 1986; Papa, 1986; Regan, 1987; Davis, 1989; Sampson, 1990).

In a study designed to assess consumers' interest in following a "heart-healthy diet" when dining out, Paul, Novascone, Ganem and Wimme (1989) reported that 87% of the patrons surveyed expressed a desire to follow this type of dietary regimen. The authors also found that more than half of the respondents believed that they had made changes in their at-home eating habits and were trying to sustain this behavior when dining out. Nanns (1985) studied elderly residents living in the Chicago area and concluded that most of the subjects in her study were able to meet their nutritional requirements when dining

out. However, more research was needed in order to determine how specific health problems impacted their dining patterns.

Most of the traditional marketing techniques employed by operators in the foodservice industry rely heavily upon socio-demographic segmentation strategies. Variables such as age, race, sex and personal income are often used to describe consumers so that they may be grouped according to these characteristics. In recent years however, it has become increasingly evident, that socio-demographic information alone does not provide enough information about consumer behavior (Lewis, 1980). Therefore other types of segmentation strategies have gained the attention of marketers in the foodservice industry, such as "benefit segmentation." As stated by Lewis (1980, p. 105) this type of segmentation "divides the market according to the benefits that customers seek." Although food quality has already been established as the most important variable affecting the consumers' choice of where to dine, there are other factors which impact an individual's perception of a foodservice establishment. With benefit segmentation, the consumers' wants or needs are identified and grouped into recognizable segments so that operators can more effectively position their product or service. In addition, other types of segmentation strategies are based upon an implied relationship between the descriptive variables and the wants or needs of the consumer. Benefit segmentation is based upon identifiable attributes of the product or service and the appeal strength of these attributes to a particular segment (Lewis, 1980).

In the foodservice trade literature, authors often refer to individuals over 65 years of age as "mature consumers" or members of the "senior segment;" thereby implying that older adults are a homogeneous group with the same needs and desires. Research has shown however, that age is not always a valid predictor of the way that people behave (Lepisto & McCleary, 1988). In order to effectively employ a benefit segmentation

strategy, operators in the hospitality industry need to know which specific attributes of their products and services are important to aged individuals. They also need specific information about the aging process and how it can impact the dining patterns of their customers. Although Americans of all ages appear to be increasingly concerned about their diet and overall health (Paul, et al., 1989), many adults over 65 have special concerns about their diet. In addition, Hayes and Ross (1987, p. 125) have suggested that older adults are "significantly more likely to have better eating habits than younger adults." Consequently, foodservice operators need to know how these health concerns influence the dining patterns of their aging patrons.

RESEARCH OBJECTIVES

The objectives of this research were as follows:

1. To identify the physiological, psycho-social and lifestyle factors that may influence the dining patterns of individuals aged 65 and older when they dine out.

2. To analyze the restaurant dining patterns of a representative random sample of individuals 65 years of age and older.

3. To explore the relationships between the socio-demographic characteristics of a representative random sample of individuals aged 65 and older and their restaurant dining patterns.

4. To assess the impact that health concerns and therapeutic diets have on the dining patterns of a representative random sample of older adults when they dine out.

5. To describe the specific features of foodservice products and services which are most important to older adults.

With an increasing proportion of the U.S population over 65 years of age, there is a need for a better understanding of the physiological, psycho-social and lifestyle factors that influence the dining patterns of older adults. This study was designed to promote an increased awareness of the specific needs and desires of aged individuals. The results of this research will enable practitioners and researcher in the fields of geriatric nutrition and foodservice operations to develop a better understanding of the dining habits of adults over 65 years of age. By determining how health concerns and specially prescribed therapeutic diets influence the behaviors of these individuals when dining in restaurants, this research will enable operators in all segments of foodservice industry to provide better service to older adults. In addition, the results of this research will help to dispel some of the commonly held misconceptions about the segment of the population over 65 years of age.

CHAPTER II

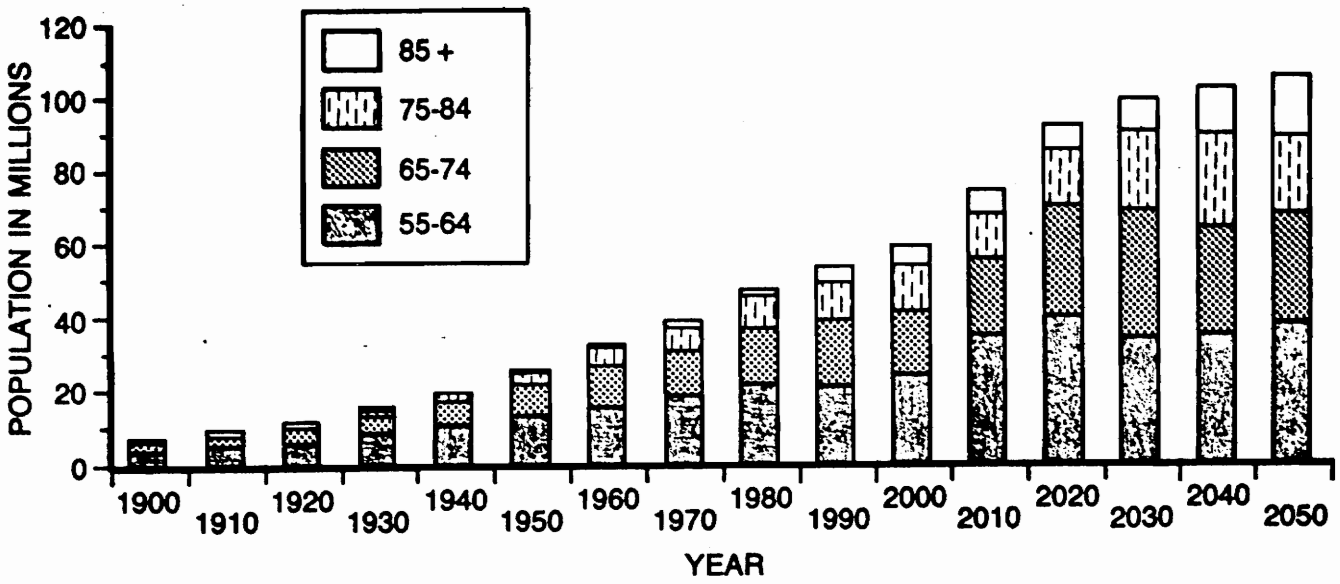
REVIEW OF THE LITERATURE

INTRODUCTION

The first four parts of this literature review provide an overview of the current status of the U.S. population over 65 years of age. The fifth section deals with the physiological changes associated with aging and how they can have an effect on the dining patterns of older adults. This is followed by a description of how various socio-demographic characteristics such as: income, education, employment, ethnicity and gender are associated with the food intake and consumption patterns of older adults. A brief synopsis of the psycho-social variables that affect the dining patterns of aged individuals is provided in the next section along with a description of some of the lifestyle factors influencing individuals over 65 years of age. And finally, some of the programs and strategies that foodservice operators have developed in response to the growing number of aged individuals are briefly described.

A DEMOGRAPHIC PROFILE OF OLDER AMERICANS

By the year 2030, it is estimated that approximately 22% of the U.S. population will be at least 65 years old and almost nine million Americans will be at least 85 years of age (Figure 1). Within the past two decades, the "senior " segment (individuals 65+) has grown twice as fast as the rest of the U.S. population (Aging America, 1988). In July of 1989, the U.S. Department of Commerce estimated that there were almost 31 million Americans at least 65 years of age, representing 12.5% of the total U.S. population (Statistical Abstracts of the U.S., 1989). Of those 65-74 years of age, 56% were female and 44% were male. This ratio changed with advancing age to the extent that 72% of those



SOURCE: Taueber, Cynthia M., U.S. Bureau of the Census. "America in Transition: An Aging Society." *Current Population Reports* Series P-23, No. 128 (September 1983) (for years 1900–1980).
Spencer, Gregory, U.S. Bureau of the Census. "Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080." *Current Population Reports* Series P-25, No. 952 (May 1984) (for years 1990-2050).

FIGURE 1. POPULATION 55 YEARS OF AGE AND OVER: 1900-2050.

Source: U.S. Congress. Senate Special Committee on Aging. (1988). Aging America, Trends and Projections, Washington, D.C.: GPO.

aged over 75 years were females. Americans are living longer primarily due to advances in public health medicine, new medical technology and improved nutrition. Currently, American males have a projected life expectancy of 71.6 years and females are expected to live 79.2 years.

In 2030, the projected life expectancy for males will rise to 74.6 years and 82.5 years for females (Aging America,1988). Life expectancy values differ with regard to race. On average, the values for whites are eight percent higher than for blacks. In later years, however this relationship reverses such that blacks after the age of 80 have higher life expectancy values than whites (Aging America,1988).

The marital status and living arrangements of older adults vary by race, sex, and age. According to the data reported in Aging America (1988), more than three quarters of elderly men (77%) are married and spend their elderly years in family settings. Shorter life expectancies for males combined with the fact that men tend to marry women younger than themselves contributes to this phenomena. Older black and Hispanic men are more likely than whites to be widowed. On the other hand, most older women (51%) are widowed and spend their later years living outside of family settings (Aging America, 1988). The annual divorce rate among the 65+ population has also increased rapidly in recent years (Uhlenberg and Meyers, 1986). Due to declining mortality rates, fewer marriages end in death but more are vulnerable to divorce.

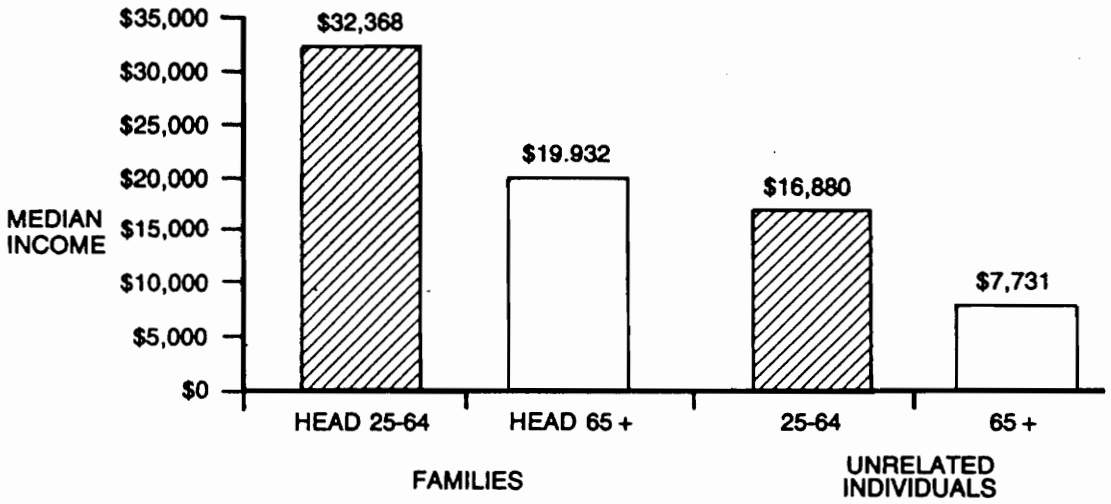
According to the U.S. Bureau of the Census (1988), only 5-6% of the elderly population are living in institutions at any one point in time and 67% of older non-institutionalized people live in a family setting (with a spouse or other relative). Most older adults prefer to remain in their own homes for as long as they can but their living arrangements are generally tied to their physical health and ability to care for themselves. In 1986, approximately 30% of all non-institutionalized older people were living alone and

the vast majority (80%) of those were women (Aging America, 1988). Nevertheless, researchers have found that most older adults do maintain close contact with their adult offspring. Although they may not live in close proximity to their children, most talk on the phone and/or visit with their children on a regular basis (Shanas, 1986).

Today Americans over 65 years of age are more highly educated than any other generation before them. The average number of years spent in school increased from 8 to 12.6 during the time period from 1900 to 1980 (Aging America, 1988). In 1986, most older adults had completed 11.8 years of formal education as compared with 12.6 for the rest of the adult population. Thus, the gap in education between the elderly population and the non-elderly is steadily decreasing.

THE ECONOMIC STATUS OF AGED INDIVIDUALS

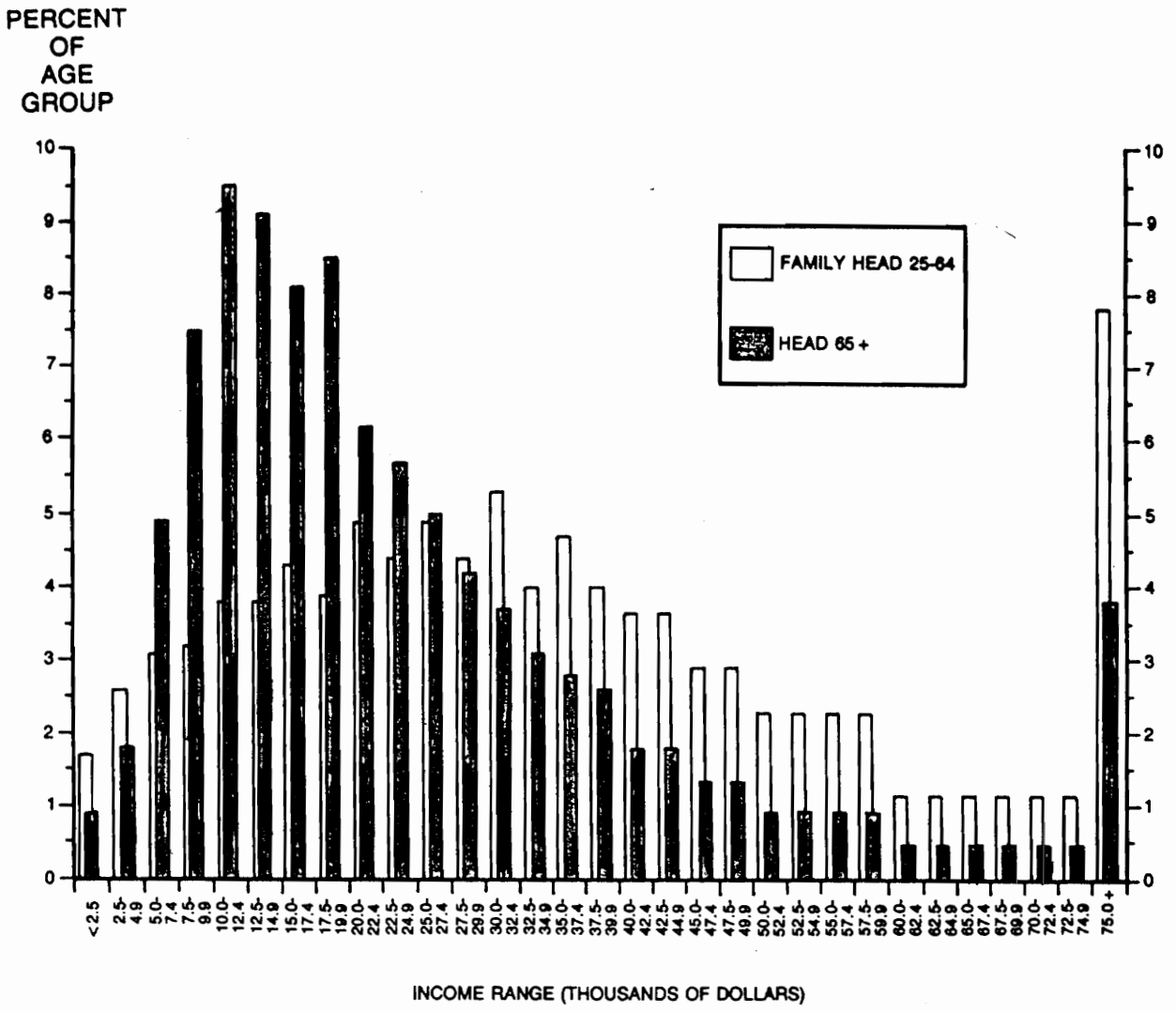
According to the U.S. Bureau of the Census, the median level of income before taxes for families with head 65 years of age and older was $20,333 in 1987 (Aging America, 1988). This figure represents approximately 62% of that reported for families headed by individuals aged 25-64 years (Current Population Reports, 1988). In general, the economic status of aged individuals, as a group, has improved significantly over the last twenty years. Nevertheless, research has shown that the elderly are far more likely than the non-elderly to be living just above the poverty level (Figure 2). For example, in 1986, 15.5% of those aged 65+ had incomes between the poverty level and one-and one half times the poverty level (Aging America, 1988). Furthermore, the economic status of the elderly is more varied than any other age group. There are pockets of poverty and racial inequality among senior Americans. Some older persons have substantial resources, while others have practically none (Figure 3). The oldest among the elderly have the lowest income levels such that the poverty rate for persons aged 85+ is almost twice the rate for



SOURCE: U.S. Bureau of the Census. "Money Income and Poverty Status of Families and Persons in the United States: 1986." *Current Population Reports* Series P-60, No. 157 (July 1987).

FIGURE 2. MEDIAN INCOME OF OLDER AND YOUNGER FAMILIES AND UNRELATED INDIVIDUALS: 1986

Source: U.S. Congress. Senate Special Committee on Aging. (1988). Aging America, Trends and Projections, Washington, D.C.: GPO.



SOURCE: U.S. Bureau of the Census. "Money Income and Poverty Status of Families and Persons in the United States, 1986." *Current Population Reports* Series P-60, No. 157 (July 1987).

NOTE: The data for chart 2-2 are plotted in intervals of $2,500, except for the last category ($75,000+). For intervals below $40,000, the data were taken directly from the Census Bureau source. For income between $40,000 and $75,000, the Census Bureau reports data in intervals larger than $2,500. Consequently, for chart 2-2, distribution estimates for income above $40,000 were derived by assuming a flat distribution in $2,500 segments within those larger intervals reported by the Census Bureau.

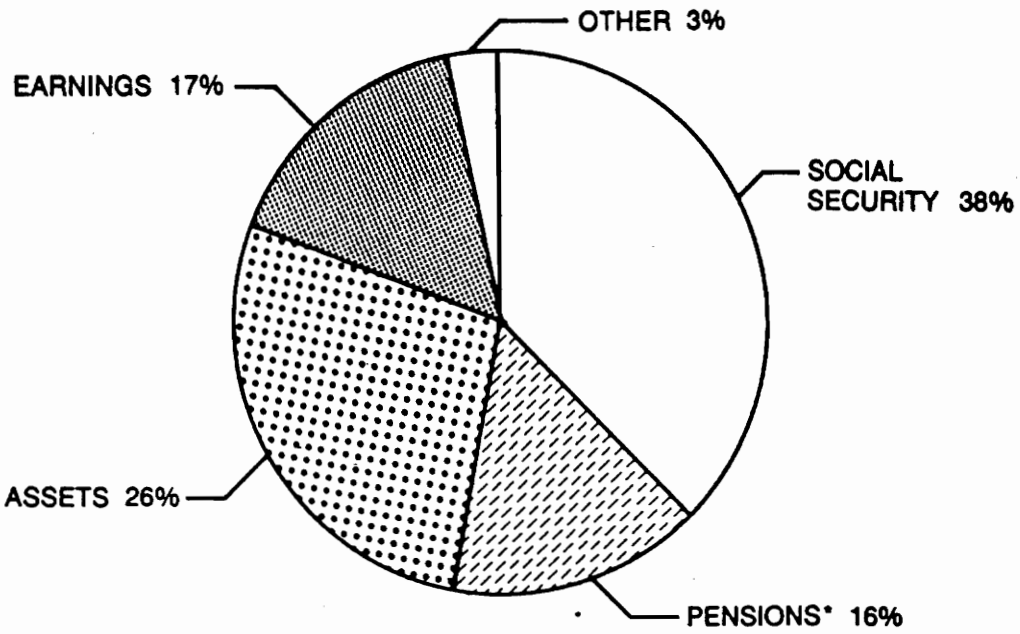
FIGURE 3. DISTRIBUTION OF MONEY INCOME OF ELDERLY AND NONELDERLY FAMILIES: 1986

Source: U.S. Congress. Senate Special Committee on Aging. (1988). Aging America, Trends and Projections, Washington, D.C.: GPO.

those between 65-74 years of age (Aging America, 1988). Social Security and other forms of in-kind benefits make a significant contribution to the well-being of elderly persons. The majority of the elderly depend heavily upon Social Security for a large part of their income for their retirement years.Personal assets are the second most important source of income, followed by earnings from employment and employee pensions (Aging America, 1988). While income from paid employment is also important for the young-old, it declines in importance with age.

According to the U.S. Bureau of the Census, nine out of ten aged individuals received social security benefits in 1986, representing an average 38% of their annual income (Figure 4). Elderly individuals with annual incomes below $5,000 derived 77% of their income from Social Security benefits, while those with income levels above $20,000 per year derived only 21% of their income from Social Security (Aging America, 1988). Ninety seven percent of the population aged above 65 are covered by Medicare hospital and physicians insurance and 12% of the elderly population in the U.S. are covered by Medicaid (health insurance for individuals with low income levels).

In general, the labor force participation of older adults has declined dramatically in recent years. Societal pressures, technological changes and educational expectations with regard to employment have contributed to the decline (Chen, 1986). Early retirement has become an increasingly popular option for many older adults. According to one estimate, only six out of ten men aged 60-64 were still a part of the labor force in 1980, (Chen, 1986). Although males today spend an average of seven more years in the labor force than they did in 1900, this represents a smaller proportion of their lifespan (Aging America, 1988). On the other hand, as women increase the proportion of time that they spend working outside of the home, the number of women aged 55-64 participating in the force has increased from 27% in 1950 to 42% in 1982.



*Includes railroad retirement which accounts for about one percent of income for aged units. Railroad retirement has both pension and social security components.

SOURCE: Grad, Susan. *Income of the Population 55 or Over, 1986*. Pub. No. 13-11871, Washington: U.S. Social Security Administration (forthcoming).

FIGURE 4. COMPOSITION OF INCOME: 1986

Source: U.S. Congress. Senate Special Committee on Aging. (1988). Aging America, Trends and Projections, Washington, D.C.: GPO.

CONSUMPTION PATTERNS OF OLDER AMERICANS

Overall, the elderly buy less than the non-elderly and spend a higher proportion of their household budget on essential items (Figure 5). Food, housing and medical care amount to an average 60% of their consumption dollars versus 49% of the total for individuals under 65 (Aging America, 1988). Health care is the one commodity that aged individuals consistently spend more on (in actual dollars) than younger persons. Food costs comprise an average 17% of expenditures for older adults compared with 15% for individuals under 65 years of age. According to The Conference Board/U.S. Bureau of the Census, adults over 65 years of age are less likely to have discretionary income than younger adults but of those who do have it, seniors record the highest per capita levels (National Restaurant Association, 1988).

In general, the elderly tend to eat more regularly and skip fewer meals than younger adults (Chen, 1986). Hunter and Linn (1979) found that 45% of their subjects ate three full meals per day and 45% consumed at least two full meals daily. The typical diet of most older Americans does not differ significantly from that of the general population (Betts, 1988). Most research indicates that aged individuals continue to consume the same foods as they did when they were younger. Breakfast is often the favorite meal of older adults and they tend to consume a larger percentage of their daily energy requirements and more nutrients from their morning meal than adults under 65 years of age (Chen, 1986).

Older adults do not eat out as frequently as individuals in other segments of the U.S. population (Chen 1986; Regan, 1987; N.R.A. 1988; Schlenker, 1984). According to data collected for the National Restaurant Association,* individuals aged 65-74 account

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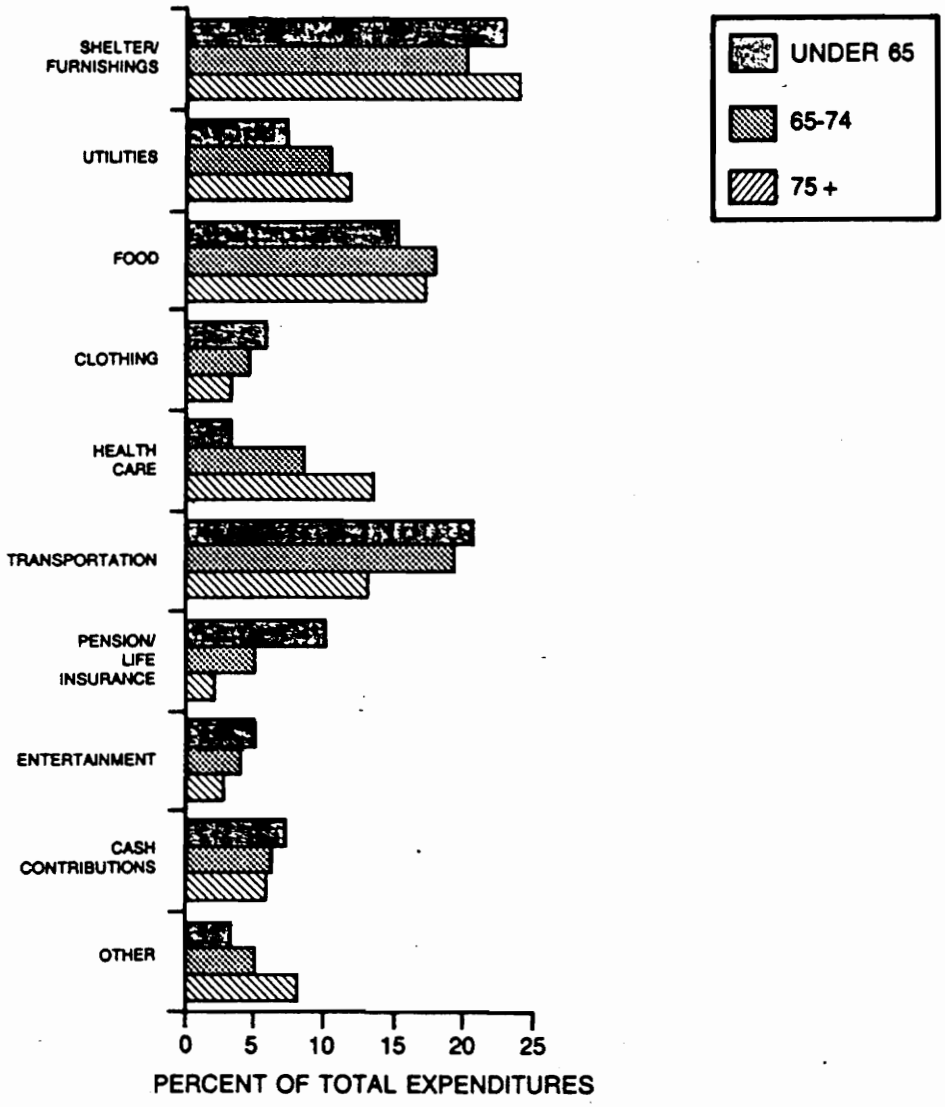
* In 1986 The National Restaurant Association commissioned NPD CREST (Consumer Reports on Eating Share Trends) to do a special study of consumer behavior by age and sex.



SOURCE: U.S. Bureau of Labor Statistics. *Consumer Expenditure Survey: 1984 Interview Survey*. Bulletin 2267, Washington: U.S. Department of Labor, August 1986.

FIGURE 5. CONSUMER EXPENDITURES BY TYPE AND AGE GROUP: 1984

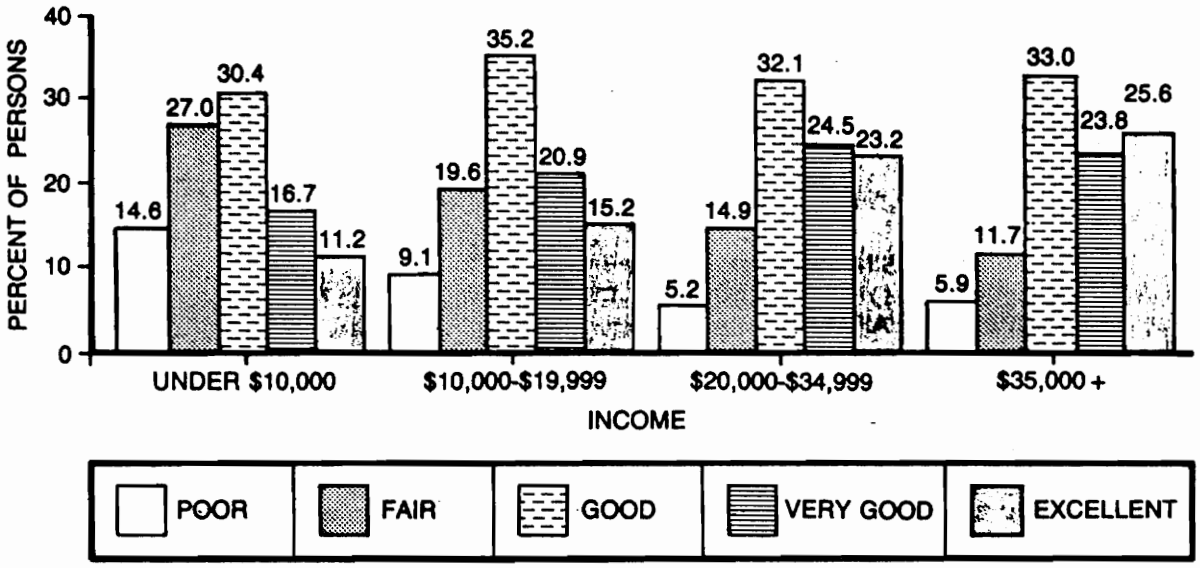
Source: U.S. Congress. Senate Special Committee on Aging. (1988). Aging America, Trends and Projections, Washington, D.C.: GPO.

for nearly 13% of all households in the U.S., but represent only eight percent of all restaurant sales. This figure also declines with age such that consumers aged 75 and older (9% of all U.S. households) account for only 3% of restaurant traffic. Furthermore, individuals over 65 years of age spend less on food away from home than other population groups. The average per person cost for food eaten away from home amounted to $8.24 per week for individuals between 65 and 74 years of age compared to $9.16 per week for 45-54 year olds (National Restaurant Association, 1988). As stated by Chen (1986), "the high cost of restaurant meals relative to food prepared at home and limited mobility may discourage seniors from eating out more often." It is interesting to note however that restaurant usage by older adults is on the rise. Between 1982 and 1986 total restaurant visits by aged individuals increased by 14% as opposed to an overall increase of 11% for the total population.

THE HEALTH AND NUTRITIONAL STATUS OF OLDER AMERICANS

The majority of older Americans view themselves as healthy and do not report severely limited activity (Aging America, 1988). According to the Health Interview Survey which was conducted by the National Center for Health Statistics in 1986, only 30% of elderly persons living in the community described their health as fair or poor.
This nationwide survey did not include residents living in institutions which account for approximately 5% of the total population over 65. The results suggest that most older adults believe that they are in reasonably good health. Self- assessment of health status is however related to income. Elderly individuals with higher income levels generally reported their health as better than individuals with less income (Figure 6).

Over the past 80 years, acute illnesses have become less troublesome for aging individuals but chronic conditions have become more prevalent among the 65+ population.



SOURCE: National Center for Health Statistics. "Current Estimates from the National Health Interview Survey, United States, 1986." *Vital and Health Statistics* Series 10, No. 164 (October 1987).

FIGURE 6. SELF-ASSESSMENT OF HEALTH BY INCOME FOR PERSONS 65 YEARS AND OLDER: 1986

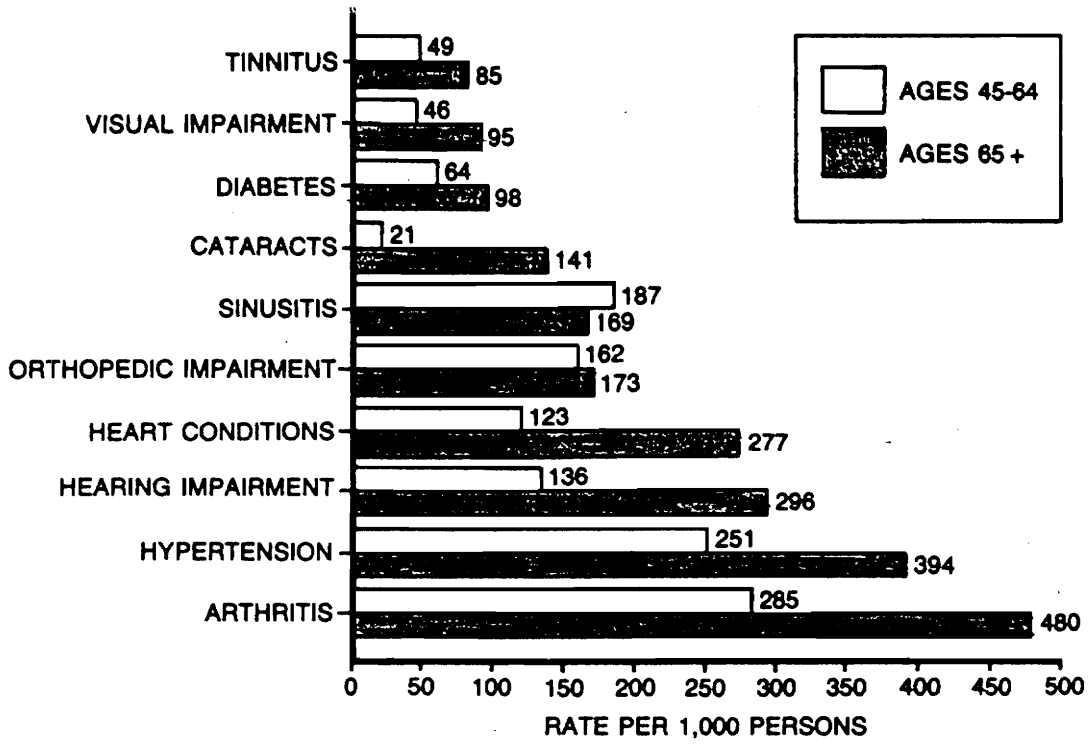
Source: U.S. Congress. Senate Special Committee on Aging. (1988). Aging America, Trends and Projections, Washington, D.C.: GPO.

Advances in public health medicine have enabled Americans to live longer, however the age at which the likelihood of developing a chronic illness has increased rapidly. In 1986, the leading chronic conditions for the elderly were arthritis, hypertensive disease, hearing impairments and heart conditions (Figure 7).

According to the data collected by the National Center for Health Statistics, diseases of the digestive and respiratory systems, cardiovascular diseases, and cancer are the leading causes of hospitalization among the elderly (Aging America,1988). Aged individuals experience different types of health conditions depending on their race and sex. While elderly men suffer from acute illnesses and conditions such as heart disease, older women are plagued by arthritis, osteoporosis and other chronic conditions (Aging America, 1988). In general, elderly blacks are in poorer health than elderly whites, with hypertension being especially troublesome for this segment of the population.

The leading cause of mortality among older Americans is heart disease (Aging America, 1988). It accounts for more doctor visits, hospital days, bed days and deaths than any other health problem in the U.S.A. Fortunately, there has been a marked decline in the death rates for heart disease. This is largely attributed to improved methods for controlling hypertension and increased dietary awareness (Aging America, 1988).

As noted by Templeton (1978), the three main concerns regarding the nutritional status of older adults are; (1) diets low in essential nutrients, (2) the prevalence of obesity, and (3) the increased incidence of modified diets. Numerous studies of the elderly have revealed that aged individuals are at risk for nutritional deficiencies (O'Hanlon & Kohrs, 1978). According to the results of the Ten-State Nutrition Study conducted during 1968-1970, very few of the elderly participants met their daily energy (calorie) requirements, regardless of socioeconomic background (Krause & Mahan, 1984). Almost one third of



SOURCE: National Center for Health Statistics. "Current Estimates from the National Health Interview Survey, United States, 1986." *Vital and Health Statistics* Series 10, No. 164 (October 1987).

FIGURE 7. MORBIDITY FROM TOP TEN CHRONIC CONDITIONS: 1986

Source: U.S. Congress. Senate Special Committee on Aging. (1988). Aging America, Trends and Projections, Washington, D.C.: GPO.

the older adults surveyed did not consume enough ascorbic acid (vitamin C), calcium or vitamin A (Krause & Mahan, 1984). The Nationwide Health and Nutrition Survey (HANES) study conducted from 1971-1974 produced similar findings. Additional studies have revealed that some older adults also exhibit deficiencies in dietary protein and riboflavin (Hunter & Linn, 1979; O'Hanlon & Kohrs (1978). The calcium, vitamin A and thiamin intakes were low amongst a group of apparently healthy older adults residing in Corvallis, Oregon.(Krause & Mahan, 1984). As noted by O'Hanlon & Kohrs (1978) it is difficult to compare the research data regarding the nutritional status of older Americans because the dietary methodology and standards of comparison are often different.

In writing the tenth edition of the Recommended Dietary Allowances (RDAs), the members of the Food and Nutrition Board and the Committee on Dietary Allowances concluded that the data regarding the nutritional requirements of older adults were insufficient (Recommended Dietary Allowances-10th Edition, 1989). Therefore, it was decided not to establish separate RDAs for people over 70 years of age. They made additional comments for some nutrients but decided that it was unwise to make generalized statements concerning all older adults because every individual ages differently. Table 1 provides an overview of the Recommended Dietary Allowances that were published by the Food and Nutrition Board in 1989.

Special therapeutic diets designed to help treat chronic illnesses are frequently consumed by older adults (Schlenker, 1984). They are usually prescribed in an attempt to relieve some of the symptoms which are characteristic of age-related diseases. Table 2 provides a listing of common ailments and the therapeutic diets which are usually prescribed as part of their treatment. According to the data presented by Smith, Smith & Gilligan (1988) hypertension, hyperlipidemia , arthritis and diabetes mellitus are the most

TABLE 1. THE NUTRITIONAL REQUIREMENTS OF AGED INDIVIDUALS

Nutrient	Physical Change/Rationale	Requirement 51-75 years	Requirement Over 75 years
Energy	Decline in basal metabolic rate = 2% per decade after 21 yrs. of age Decreased physical activity Loss of muscle mass	M=2000-2800 kcal F=1400-2200 kcal	M=1650-2450 kcal F=1200-2000 kcal
Protein	Poor health may increase need for protein & certain amino acids	M=63 grams/day F=50 grams/day	Males & Females 0.8g/kg body wgt
Vitamin A	Healthy elderly do not appear to need special attention	M=1000 µg RE F=800 µg RE	Same as 51-75 yrs
Vitamin D	Institutionalized elderly at risk or if no exposure to sunlight	M=5 µg/day F=5 µg/day	Same as 51-75 yrs
Vitamin E	No evidence to suggest that the requirement increases with aging	M=10 mg alpha TE F=8 mg alpha TE	Same as 51-75 yrs
Vitamin K	Elderly persons on antibiotics or mineral oil over time or those w/ chronic disease, drug therapy or poor diet may need additional amts.	M & F= 1µg/kg body weight/day Avg. M=80 µg/day Avg. F=65 µg/day	Same as 51-75 yrs
Vitamin C	No evidence to suggest a change related to the aging process	Males & Females = 60 mg/day	Same as 51-75 yrs
Thiamin	No evidence that requirements are increased by aging	M=1.22 mg/day F=1.03 mg/day	Same as 51-75 yrs
Riboflavin	Increased amount for people who undertake heavy exercise	M=1.4 mg/day F=1.2 mg/day	Same as 51-75 yrs
Niacin	No evidence that requirements are increased by aging	M=15 mg NE F=13 mg NE	Same as 51-75 yrs
Vitamin B_6	No evidence that requirements are increased by aging	M=2.0 mg/day F=1.6 mg/day	Same as 51-75 yrs
Folate	Older adults are in the same category as younger adults	M=200 µg/day F=180 µg/day	Same as 51-75 yrs
Vitamin B_{12}	Gradual appearance of malabsorption w/ aging; no changes in RDA	Males & Females = 2.0 µg/day	Same as 51-75 yrs
Calcium	Older women may need to increase intake but the RDA has not changed	Males & Females = 800 mg/day	Same as 51-75 yrs
Phosphorous	Deficiency may occur in patients receiving aluminum hydroxide as an antacid for prolonged periods	Males & Females = 800 mg/day	Same as 51-75 yrs
Magnesium	No evidence that requirements are increased by aging	M=350 mg/day F=280 mg/day	Same as 51-75 yrs
Iron	No evidence of a high prevalence of iron deficiency in the elderly	Males & Females = 10 mg/day	Same as 51-75 yrs
Zinc	No evidence that requirements are increased by aging	M=15 mg/day F=12 mg/day	Same as 51-75 yrs
Iodine	No evidence that requirements are	M & F=150 µg/day	Same as 51-75 yrs
Selenium	No data on requirements of the elderly	M=70 µg/day F=55 µg/day	Same as 51-75 yrs

Source: Recommended Dietary Allowances-10th Edition, 1989

TABLE 2. SPECIALLY PRESCRIBED DIETS

Condition/Disorder	Diet
Congestive Heart Failure	Low sodium
Atherosclerotic Heart Disease	Low cholesterol
Hypertension	Low sodium
Obesity	Low calorie
Diabetes	Calorie controlled diet, low-sugar diet (diabetic exchange)
Renal Failure	Low Protein
Cirrhosis of the Liver	Low protein, low sodium
Diverticulosis and Diverticulitis	Low-fat
Constipation	High fiber
Hiatus Hernia	Low-bulk
Cholecystitis	Low-fat, low cholesterol
Colostomy	Low-fiber

Source: Roe, 1987, p. 94

commonly treated conditions amongst older adults. As illustrated in Figure 7, three of the top ten causes of morbidity amongst older adults are diet related.

It has been estimated that some 18-43% of older Americans consume therapeutic diets and weight reduction appears to be one of the most important concerns of adults 65 and older (Schlenker, 1984; Templeton, 1978). In 1986, Fanelli & Abernethy found that 50% of the respondents in their study of older North Carolinians reported having been prescribed with a therapeutic diet. Thirty-nine of the 111 (35%) participants indicated that they were trying to loose weight and forty-six (41%) were attempting to maintain their current weight. Templeton (1978), found that 25% of the elderly participants in her study were on therapeutic diets and that the majority were prescribed for weight reduction purposes.

As noted by Chen (1986), in some cases, therapeutic diets can be problematic for elderly individuals. Older adults with multiple health problems may become malnourished because their ailments require diets which conflict with one another. These superimposed diets may be unpalatable or difficult to follow resulting in insufficient consumption of food energy and essential nutrients. Moreover, studies of the elderly have revealed that a number of older adults obtain their diet information from someone other than a health professional (Templeton, 1978). Certain weight-loss diets popularized by the media may be especially dangerous to aged individuals because they place a heavy burden on the kidneys (Schlenker, 1984). In an attempt to prevent or alleviate certain degenerative health conditions (i.e., arthritis), aged adults may also follow poorly planned diets (home remedies) which have no therapeutic value (Schlenker, 1984). On the other hand, specially prescribed diets can also have a positive impact on the nutritional status of older adults. Elderly individuals who follow specially prescribed therapeutic diets may select their food

more carefully than individuals who are not influenced by dietary restrictions (Schlenker, 1984).

Another important concern regarding the nutritional status of older adults is the extensive use of medication. According to one estimate, the average aged individual in this country has at least one chronic illness and takes from one to seven different medications on a regular basis (Natow & Heslin, 1986). Consequently, older adults are at increased risk for adverse drug reactions and harmful interactions between drugs and food. An individual's appetite and taste perception may also be affected by the consumption of certain drugs. This is an important consideration for the elderly because their nutritional status may already be compromised by the aforementioned physiological changes that occur with aging. The drugs that they take can interfere with the digestion and absorption of certain nutrients or the foods they consume may alter the action of their medications.

In general, nutrition education programs for the elderly are designed to help aged individuals understand the relationship between diet and health. They stress the importance of a balanced diet and encourage older adults to make healthy food selections (Natow & Heslin,1980). Most of the research concerning the impact of nutrition education for older adults, suggests that aged individuals have an interest in maintaining good nutritional habits; however, it may be difficult for some of them to change lifelong eating patterns. Wong, Krondl & Williams (1982) found that nutrition education programs for the elderly promote changes at the cognitive level but may not bring about significant changes in their actual dietary practices. In 1986, Gilbert, concluded that although most older adults are interested in health information they are uncertain about what constitutes a healthy diet. They appear to be confused by some of the advertising claims that are made with regard to nutrition. In a study designed to assess the effectiveness of nutrition education for the elderly, Bedell & Shackleton (1989) found that some of the participants demonstrated a

slight increase in positive eating behaviors. However, the authors did not determine where the participants consumed their meals or by whom they were prepared. In order to bring about long term changes in food selection behaviors, a nutritionist or health educator must be able to address the specific dining patterns and concerns of their target population. To date, very little attention has been devoted to the fact that many older adults enjoy eating out in restaurants.

PHYSIOLOGICAL CHANGES ASSOCIATED WITH AGING AND THEIR IMPACT ON THE DINING PATTERNS OF OLDER ADULTS

With advancing age, nearly all body tissues begin to exhibit a decline in functional capacity and resiliency. Research has revealed that different organs and tissues age at various rates and the decline in physiological functions differs among individuals (Chen, 1986). The physiological changes associated with aging have been summarized in Table 3.

The dining patterns of older adults may be influenced by the aforementioned physiological changes but the effects will not be the same for every individual. For example, many people mistakenly believe that all aged individuals wear dentures and cannot eat tough or chewy food items. While approximately 50% of all Americans become edentulous by age 65, and 67% have lost some of their teeth by the age of 75, the majority do *not* rely on soft or pureed foods for the bulk of their diet (Chen, 1986; Schlenker, 1984). Aged individuals may consume a greater variety of foods by wearing dentures, but most aged individuals do not appear to be hampered by dental problems (Schlenker, 1984).

As indicated in Table 3, a general decrease in sensory acuity is experienced with age (Natow & Heslin, 1986; Chen, 1986; Schlenker, 1984). Thus, an older person's appetite may be adversely affected by a reduced sense of smell and taste and this may be further

TABLE 3. PHYSIOLOGICAL CHANGES WITH AGING

Body System	Physiological Changes	Probable Symptoms
Cardiovascular	Decreased force of contraction Decreased stroke volume Declining cardiac output Reduced elasticity of blood vessels	Poor circulation Enlarged heart muscle Increased blood pressure Limited physical activity
Respiratory	Loss of elasticity Decreased maximum breathing capacity	Difficulty breathing Risk of aspiration
Renal	Decreased blood flow Reduced glomerular filtration Decreased tubular excretion Reduced number of nephrons	Fluid retention Dehydration Risk of drug toxicity Risk of electrolyte imbalance
Neuromuscular	Decreased responses of receptor organs Decline in physical strength Decline in motor function Decline in muscle mass	Decreased physical strength and stamina
Nervous	Decline in reaction time Decreased speed of nerve impulses Decreased responses of receptor organs	Impaired sensory responses (touch, taste, smell,temp.) Reduced appetite Slowed reflexes & response times
Endocrine	Reduced blood levels of some hormones (esp. sex hormones) Increased sensitivity in some tissues Declining glucose tolerance	Hypertension Osteoporosis Reduced tolerance of simple sugars
Gastrointestinal	Loss of teeth Loss of taste buds Decreased saliva secretion Reduced hydrochloric acid in stomach Decreased secretion of digestive enzymes and mucous Loss of muscle tone in stomach Decreased peristalsis Formation of intestinal diverticula	Difficulty chewing and/or swallowing, (dry mouth) Decreased taste acuity Impaired digestion and absorption of some foods Malabsorption of certain nutrients Lactose intolerance Delayed gastric emptying Diverticulosis Constipation
Skin	Reduced subcutaneous fat Atrophy of sweat glands & hair follicles Skin discolored, thin, dry, wrinkled, and fragile Increased number of cancers	Decreased ability to adjust to temperature changes Increased risk of heat stroke dehydration and/or hypo-thermia

Adapted from Natow and Heslin, 1986

complicated by smoking and/or dentures which cover the palate (Natow & Heslin, 1986). In a study of food use amongst aged individuals Krondl, et al. (1982), reported that in spite of a general decrease in the number of taste buds, taste (flavor perception) was significantly correlated with use of 14 marker foods. Moreover, they concluded that taste was the strongest motive in determining the food selections of the older adults who participated in their study. Thus, the decline in sensory acuity may reduce an aged individual's appetite but does not necessarily influence his/her food selections which are primarily motivated by taste.

Age-associated changes in digestive capacity and gastrointestinal functions are responsible for many of the problems that older adults have with regard to intolerance of certain food items. Digestive upset and abdominal distress are frequently cited as the reasons why aged individuals avoid particular food items and/or limit their consumption to an occasional basis. Diminished secretory activity in various sections of the digestive tract coupled with a decrease in muscle tone and a reduction in peristalsis can delay gastric emptying and may result in painful digestion and/ or constipation (Natow & Heslin, 1986). Caloric requirements also decrease with age and many older adults prefer smaller than average portions of food because they cannot eat as much as they did when they were younger (Schlenker, 1984). Aged individuals may avoid fried or fatty foods because fat and protein digestion may become less efficient with age (but this does not affect the nutritional status of most older adults). Some individuals are also especially wary of gas-forming ingredients such as legumes, onions and cabbage. In spite of these age-associated changes, research suggests that older adults can digest most foods (Chen, 1986; Natow & Heslin, 1986; Schlenker, 1984).

Physical disabilities can have a profound effect on the health of an aged individual. It has been estimated that nearly one in four older Americans has some degree of physical

limitation (Aging America, 1988). Ailments such as poor vision, arthritis, and hearing loss interfere with an older person's ability to carry out many of the tasks associated with the consumption of nutritious meals. According to Clarke & Wakefield (1975), the nutrient intakes of older individuals are often adversely affected by mobility problems.

"The degree of functional limitation" is a phrase which is widely used to describe the degree of limitation or difficulty that individuals experience in performing personal care or home management activities (Aging America, 1988). Personal care activities such as bathing, dressing, and eating as well as getting in and out of bed are often classified as "activities of daily living" (ADLs). Home management activities including: preparation of meals, shopping, managing money, using the telephone and doing light housework, may be referred to as "instrumental activities of daily living" (IADLs). Although most adults report that they are in good health and are not affected by mobility problems, 21% of persons between the age of 45-65 years experience some limitations in activity and 4.5 % are unable to function in major activities, (Chen, 1986; Schlenker, 1984). Forty three percent of the population over 64 years of age are somewhat disabled with 16% unable to perform major activities (Chen 1986). Hunter & Linn (1979), studied the dietary patterns of the urban elderly and found that aged individuals with more severe physical disabilities consumed meals that were of poorer quality than individuals who were less severely handicapped. Chronic degenerative conditions such as arthritis may be especially troublesome for some older adults. According to one estimate, 25% of older adults with activity limitations have arthritis and are at risk for being undernourished (Schlenker, 1984). Special services such as home delivered meals and home health assistance can be especially important to these individuals.

Research conducted by the National Restaurant Association suggests that older adults can be loyal restaurant patrons when they find a dining establishment where they feel

comfortable with the menu and receive consistently high quality service (Conroy, 1986; Papa, 1986). Therefore, operators in the foodservice industry should be aware of the physiological changes that occur with aging so that they may better understand and accommodate mature consumers.

SOCIO-DEMOGRAPHIC FACTORS AFFECTING THE DINING PATTERNS OF OLDER ADULTS

The traditional *economics approach* to analyzing food consumption behavior focuses on the relationship between the monetary value of the food and personal income (Popkin & Haines, 1981). According to the economic model, an individual's food selections are presumably motivated by the desire to maximize utility within a limited budget. As noted by Popkin & Haines (1981), there are several limitations to the aforementioned approach. For example, food selections are often influenced by factors other than price and income. Brand loyalty and social status can have a significant impact on purchase decisions. The *marketing approach* towards analyzing consumers' food selections focuses upon the general market determinants of demand for a particular product or group of products (Popkin & Haines, 1981). Thus, the factors that influence consumption decisions are categorized as variables that are either within the consumers' control (internal) or outside of their control (external). Demographic and socioeconomic factors are intrinsic (within the consumer's control), but factors such as price, product availability and merchandizing are not. This approach has effectively captured more of the facets of consumer behavior but does not address the behavioral determinants of purchase decisions. The New Home Economics (NHE) approach towards the analysis of household consumption behaviors is supported by Popkin & Haines (1981), because it effectively recognizes factors which have no market price. Individual and household values (such as

health concerns) as well as the value of time and human capital can be incorporated into this framework. Unfortunately, the NHE approach is relatively new and has not been tested extensively with regard to food consumption patterns (Popkin & Haines, 1981).

INCOME

The relationship between the monetary value of the food and personal income is usually expressed in the form of Engel's Law and may be referred to as income elasticity or the marginal propensity to consume (MPC), (Axelson, 1986). According to Engel's Law, when there is an increase in personal income, there is a decrease in the relative importance of the sum of money spent on food purchases as compared to other expenses but the overall amount of money spent on food may increase (Swagler, 1975). In the U.S., the overall marginal propensity to consume (income elasticity) is very low (relatively inelastic), which means that an increase in household income produces only a small increase in the amount of money spent on food. Food in the U.S. is plentiful and relatively inexpensive compared with other countries, therefore a 1% change in income is expected to result in a 0.17-0.36% change in the amount of money spent on food (Salathe, 1979). According to estimates developed for the U.S. Department of Agriculture, luxury food items such as snack foods and meals purchased away from the home have higher income elasticity values than staple items consumed at home (Salathe, 1979). In 1979, the income elasticity for away-from-home food purchases was about 0.80 compared to 0.15 for at-home expenditures, meaning that expenditures for food eaten away from home are more sensitive to fluctuations in income (Salathe, 1979).

Over the past 25 years, there has been a steady rise in the amount of money that Americans spend on food eaten away from home (Figure 8). In 1965, 30% of the money that consumers spent for food went towards away-from-home meals and snacks. By

Away-From-Home Food Spending Has Soared

Year	1965	1970	1975	1980	1985	1988	1989[1]
				Billion dollars			
All food	86.7	117.1	188.0	306.2	407.4	485.5	514.9
At-home food	60.5	77.5	119.9	185.6	234.6	263.3	280.1
Sales	56.6	73.4	113.9	177.4	227.5	255.1	271.6
Home production and donations	3.9	4.1	6.0	8.3	7.1	8.2	8.5
Away-from-home meals	26.2	39.6	68.1	120.5	172.8	222.2	234.8
Sales	22.1	33.8	57.8	103.3	151.0	196.4	208.0
Supplied and donated[2]	4.1	5.8	10.3	17.2	21.8	25.8	26.8
Alcoholic beverages	15.6	22.0	31.8	50.0	65.7	74.0	77.2
Packaged	9.0	12.9	19.3	29.4	39.2	42.1	43.9
Drinks	6.6	9.1	12.5	20.6	26.5	31.9	33.3

[1]Preliminary. [2]Includes child nutrition subsidies.

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FIGURE 8. FOOD EXPENDITURES: 1965-1989

Source: Blaylock, J., Elitzak, H., & Manchester, A. (1990). Food expenditures. National Food Review, 13, (3), 17-25.

1989, this figure had risen to 46% of their food budget. This trend has been fueled by higher levels of household income and a steady increase in the number of women who work outside the home (Blaylock, Elitzak & Manchester, 1990). From 1988 to 1989, spending for meals and snacks eaten away from home rose by 5.7% while spending for food to be eaten at home rose by 6.4%. Considering that the price of food eaten away from home includes the cost of preparation and service, these figures can be somewhat misleading. The *quantity* of food purchased away from home amounted to 24% of the total quantity of food consumed in 1965, 29% in 1980 and rose to 31% in 1988. Thus, the *quantity* of food purchased away from home has not risen as dramatically as one might assume based on the figures for food expenditures.

In 1989, food accounted for 11.8% of personal disposable income (after taxes), which was down from 12.1% in 1988 and 14.2% in 1975 (Blaylock, et al., 1990). As mentioned previously, elderly individuals tend to spend a greater proportion of their income on food than households with more income (Aging America, 1988; Blaylock, et al., 1990; Schlenker, 1984). This is largely attributed to the drop in income that they experience following retirement. Consequently, many of the elderly are at risk for developing nutritional problems, especially if they spend a large percentage of their limited income on medical care (Schlenker, 1984). Women and minority groups are in even greater danger because a large percentage of them live at or near poverty levels even before retirement.

HOUSEHOLD COMPOSITION/LIVING ARRANGEMENT

Per person expenditures on food tend to decline as household size increases (Axelson, 1986). This is largely attributed to the economies of scale that can be achieved when buying in bulk. Research has shown that elderly individuals prefer to buy small packages of items and use more convenience foods which require little preparation

(Schlenker, 1984). Therefore, elderly individuals living alone tend to get less for their food dollars than individuals who live with families or in group settings.

Although many older adults live by themselves, little is known about their dining patterns and how often they dine away from home. Elderly individuals are more likely to have a balanced diet both in terms variety and nutrient intake if they live with their spouse (Davis, Randall, Forthofer, Lee, & Margen, 1985). Fanelli & Stevenhagen (1985) found that sharing a household with another physically active individual (family member or not) also tends to improve the diet of an older person. As stated by Briley (1989, p. 41), most aged adults would prefer to have "a bowl of soup with a friend than a steak by themselves."

GENDER AND AGE

It is often difficult to determine whether the differences in food consumption patterns of men and women are the result of physiological changes or cultural effects. A study of the food use patterns of men and women revealed that there are very few differences between the two (Cronin, Krebs-Smith, Wyse, & Light, 1982). In general, women reported using more citrus fruit, yogurt, coffee and tea, and low-calorie carbonated beverages in a three day period than the men. The men used more whole milk; luncheon meats; meat fish and poultry sandwiches; desserts, sugar, and sweet spreads, than the women in the study. Krondl, et al. (1982) studied elderly residents of the Toronto area and concluded that there were differences in the eating habits of older men and women. The women reported eating a greater variety of foods and had significantly higher food use scores for items such as fruits and vegetables. Following a thorough review of the literature on this subject, Axelson (1986) concluded that physiological changes rather than cultural factors explain the variance in food consumption patterns between males and

females *within* a cohort (people of the same age group). He found no evidence of gender-related dietary habits which were culturally based. On the other hand, "the differences found *among* age groups (cohorts) in food consumption patterns after correcting for energy needs, seem to be more culturally based, " (Axelson, 1986, p. 353). In an attempt to explain these findings Axelson (1986), theorized that food consumption patterns develop because increased exposure to particular food items enhances one's preference for them.

Most studies of age-related food preferences have been based upon cross- sectional research rather than longitudinal data. Consequently, it is difficult to determine whether the observed effects are due to aging or due to a cohort effect. Thus, technological, economic and social changes in society may have a differential impact on the eating patterns of individuals in different age groups (Garcia, Battese & Brewer, 1975). Although some authors have found that there is a general decrease in food energy intake (total kilocalories), most adults do not make significant changes in their nutrient intakes or food consumption patterns as they age (Axelson, 1986). As mentioned previously, some studies have found that aged individuals consume diets which are low in certain nutrients, these changes however have not been attributed to the aging process itself (Krause and Mahan, 1984; Hunter and Linn, 1979; O'Hanlon and Kohrs, 1978; Schlenker, 1984).

EDUCATIONAL STATUS

In general, there is a positive relationship between level of education and dietary quality, particularly when the head of the household is female (Axelson, 1986). Hunter & Linn (1979) reported that low socioeconomic status and education were correlated with poor ratings of meal quality amongst the elderly participants in their study. In 1982, Schafer & Keith reported that education was significantly related to diet quality for both elderly married and elderly single (living alone) women. When controlling for the

influence of income, they found that education and income were independent of each other in their relationship to diet quality. Templeton(1978), found that elderly individuals with less than a twelfth grade education were less likely to be at their desirable body weight than those with more formal education. In addition, the incidence of obesity was higher amongst the less educated subjects with higher income levels. In 1986, Fanelli & Abernethy developed a questionnaire designed to assess the nutrition knowledge and eating behaviors of older adults and concluded that years of education had a positive effect on the number of responses that participants answered correctly.

ETHNICITY AND RACE

The food related behaviors of cultural sub-groups in the United States have been studied extensively (Axelson, 1986). Much of the research however, is based on analyses of specific groups at an isolated point in time. This type of research design does not enable the investigator to determine whether or not the observed behaviors can be attributed to ethnicity or other factors such as the socioeconomic status of the residents of a particular geographic region. As noted by Axelson (1986), the dining patterns of different ethnic sub-groups should be compared with similar groups from the dominant culture. Researchers who have controlled for socio-demographic variables, have reported differences between cultural sub-groups and dominant cultural groups. Studies involving groups of immigrants living in the U.S. (Mexicans, Puerto Ricans, and Chinese) have revealed that food related behaviors are affected by cultural factors (Axelson, 1986). After moving to the U.S., the immigrants reported changes in the amounts and types of foods consumed but traditional methods of preparation appear to be retained.

A thorough review of the literature describing the dining patterns of elderly adults revealed that many investigators chose not to address the issue of ethnicity. Although some

do ascertain the race of their subjects, most did not go beyond specifying black or white. Very few investigators have asked their subjects to describe their ethnic background.

PSYCHO-SOCIAL FACTORS AFFECTING THE DINING PATTERNS OF OLDER ADULTS

Psycho-social factors can have a profound impact on the eating habits of older adults. They reflect an individual's access to socially mediated activities which will in turn influence food related behaviors (Axelson, 1986). Research has shown that loneliness and depression; mental deterioration, lack of education (knowledge of proper dietary principles) and immobility contribute to the poor nutritional status of older adults (Chen, 1986). Knowledge, beliefs, and attitudes reflect an individual's internal state of being and have an important impact on his/her dining patterns (Axelson, 1986).

NUTRITION KNOWLEDGE

Numerous studies have been conducted to investigate the relationship between nutrition knowledge and food related behavior (Axelson, 1986). It is difficult, however, to determine the strength of the relationship between the two because they are difficult to measure and the effect size may be small. In a study designed to assess the nutritional knowledge and attitudes about nutrition and diet among the elderly, Grotkowski & Sims (1978), concluded that socioeconomic status was the key independent variable related to nutritional knowledge. Personal attributes such as perceived nutrition knowledge, attitudes and beliefs about nutrition, diet, and health act as intervening variables in determining actual nutrient intakes of individuals. Although the association between nutritional knowledge and dietary intake was not statistically significant, the results indicate that older

adults who consider themselves knowledgeable with regard to nutrition and believe that nutrition is important, are more likely to consume a nutritionally adequate diet.

Fanelli & Abernethy (1986), found that therapeutic diets do not necessarily increase the nutrition knowledge of an individual. In their assessment of nutrition knowledge among older adults, the mean number of correct, incorrect and undecided responses to statements about nutrition did not differ significantly between the people who were complying with therapeutic diets and those who were not. The results of a study entitled "Consumer Nutrition Concerns and Restaurant Choices" conducted by NDP CREST for the National Restaurant association, seem to support these findings. According to the data, 40% of the males and 44% of the females over 65 years of age considered themselves to be "very well informed about health and nutrition concerns," (N.R.A. 1988). Nevertheless, 44% percent of the males and 40% of the females in that same group considered themselves to be overweight but only 17% and 12% respectively, indicated that they were on some type of a diet. Although many older adults appear to be interested in nutrition and maintaining a healthy diet, nutrition knowledge does not always translate into appropriate food related behavior.

ATTITUDES TOWARDS HEALTH AND NUTRITION

Much of the research concerning personal attitudes towards food and consumption behavior has focused upon the following topics: nutrition and health beliefs, sensory aesthetics, economics, convenience, sociability, prestige, etc. (Axelson, 1986). A complete review of all of the literature on this subject is, however, beyond the scope of this research endeavor.

Several of the studies on personal attitudes towards consumption behavior have been attempted in order to determine how health beliefs impact the food intake and

consumption behaviors of older adults (Axelson, Federline & Brinberg, 1985; Grotkowski & Sims, 1978; Krondl, et al., 1982; McIntosh, Kubena, Walker, Smith & Landmann, 1990; Rappaport & Peters, 1988a; Reaburn, Krondl, Lau, 1979). In 1988, following a review of the literature on the subject, Rappaport & Peters (1988a, p. 36), identified the following dimensions of food meaning which they described as "common sense reasons for eating."

- **pleasure**-refers to sensory, social-emotional and aesthetic gratification;
- **health**-refers to all considerations relevant to maintaining health and energy or preventing illness;
- **convenience**-refers to availability, low cost, and little time or effort for preparation;
- **tradition**-includes all religious, ethnic, or folk traditional meanings of food.

(Rappaport & Peters, 1988a, p. 36).

Preliminary testing of the aforementioned four-dimensional scheme yielded promising results. A sample of 248 individuals completed a questionnaire developed by the authors to test some of their assumptions proved that the four reasons for eating are relatively independent of one another (Rappaport and Peters, 1988a). There were age and gender differences in the responses such that the dimensions 'pleasure' and 'health' yielded reliable results as criteria for distinguishing between foods and between different segments of the population (Rappaport & Peters, 1988a).

A strong association between health beliefs and individual food use was reported by Krondl, et al. (1982); however taste, specifically "flavor perception" was the strongest motive in determining consumption among the participants in their study. They concluded that "nutritious foods must have acceptable flavor before they will be consumed," (Krondl, et al. 1982, p. 528). In a study designed to investigate the perceptions of elderly persons regarding the attributes of food items, Betts (1985) found that the "convenience of preparation" and "health promoting qualities" of the item were positively related to the

frequency of consumption. Foods that were perceived to be fattening were also perceived to be unhealthy but there was no relationship between these negative perceptions and the frequency of consumption for these foods (Betts, 1985). Axelson, et al. (1985), used a meta-analytic technique to review the research on food attitudes and found a significant relationship between food and nutrition related attitudes and dietary intake. Brown (1976) found that approximately one third of the respondents in her study believed that they had changed their diets within the past five years because of health concerns. The changes that they made were generally geared towards restricting their diets and eating less, or changing their food and cooking patterns (Brown, 1976). McIntosh, et al. (1990) studied the relationships between dietary intake, socioeconomic variables, beliefs about nutrition and the use of nutritional supplements among older adults. They concluded that beliefs about nutrition were related to the nutrient density of the diet (independent of socioeconomic background). Moreover, the elderly adults in their study who had positive attitudes towards the use of nutritional supplements were likely to have higher nutrient intakes than those who did not. This finding contradicts some of the earlier research which suggested that use of vitamin supplements and health food was associated with lower intakes of energy and some essential nutrients (Grotkowski & Sims, 1978). As noted by the authors, it appears that misconceptions about nutrition may in fact prompt aged individuals to develop "greater awareness and concern for eating nutritious meals" (McIntosh, et al. 1990, p. 676).

SOCIALIZATION

As mentioned previously, research has shown that socialization can have a significant impact on the dining patterns of older adults (Krondl, et al. 1982; McIntosh & Schifflett; 1984; Schafer & Keith, 1982; Schlenker, 1984). Natow & Heslin (1986) found that food selection behaviors are heavily influenced by social situations and many older adults experience life changes which leave them feeling socially isolated. Elderly individuals who have recently experienced the death of a spouse or life-long friend may not have anyone else to eat with and do not feel motivated to cook for themselves. Opportunities for socialization can improve the food choices and nutrient intakes of older adults significantly. Consequently, programs such as congregate meals for the elderly have been developed to target the aged individuals who are likely to be at risk for nutritional deficiencies.

McIntosh & Schifflett (1984), studied the effects of various types of social support on the nutrient intakes of older adults living in southwestern Virginia. From their research, they found that social support systems which were in close physical proximity to the participant were associated with higher intakes of specific nutrients. The participants in their study who were married, had close physical attachments to their neighbors or nearby religious affiliations reported better dietary intakes than those with close ties to relatives and/or friends that did not live nearby. Thus, the physical proximity of the social support system is an important factor which may impact the nutrient intake of an elderly individual. In 1982, Schafer and Keith studied three aspects of the social-psychological environment and their relationships to the diet quality of adults over 60 years of age. Personality factors (self-esteem, depression and locus of control) and interaction variables (interpersonal relationships between spouses) were compared with social influence variables. The latter included: casual information (magazine articles; television and radio advertisements;

government publications), selective information (nutrition education or cooking classes) and/or significant others (family, friends and neighbors). From their research the authors concluded that the personality and interpersonal variables provided little insight into the diet quality of their respondents. On the hand, the social influence variables demonstrated a positive association with diet quality (Schafer & Keith, 1982). Krondl, et al. (1982) conducted a study in which 60% of the participants reported that they entertained visitors in their homes once a week or more and 65% visited others on a regular basis. Thus, "social nutrition" is an important aspect of the eating process for many older individuals.

LIFESTYLE FACTORS AFFECTING THE DINING PATTERNS OF OLDER ADULTS

Adults over 65 years of age experience numerous life changes that will affect their lifestyle, especially in the years following retirement. Their daily activities depend to a great extent upon their physical health and activity patterns. It is important not to make generalizations about the lifestyles of aged Americans because they are a heterogeneous group. The following information is presented as an overview of some of the lifestyle factors which *may* impact the dining patterns of older adults.

CHANGING ROLES OF THE OLDER ADULT

As the baby boom generation matures it is likely that "the marital status of cohorts arriving at old age in the future will not be the same as those of the current older generation," (Uhlenberg & Meyers, 1986, p. 351). Many older adults outlive their spouses by a number of years or become divorced and choose to live alone. As mentioned previously, loss of a spouse or other family members may contribute to feelings of social isolation. Older adults who live alone and cannot or do not cook for themselves, face the risk of developing nutritional deficiencies. There are alternatives to home cooked meals,

such as congregate meals and restaurant dining, but some aged adults living alone may feel awkward about dining alone outside of their home. Furthermore, they may not have adequate financial resources to afford prepared meals.

PHYSICAL ACTIVITY PATTERNS

For many aged individuals physical disabilities inhibit their mobility and transportation may become more difficult with age. Night blindness can be a serious problem for some elderly people so they must avoid driving at night or in bad weather. Others are hesitant to use public transportation, especially in urban neighborhoods where there is heavy crime and/or violence against the elderly. In rural areas grocery stores and foodservices establishments are not likely to be within walking distance and bad weather may prevent older people from going outdoors for many days.

On the other hand, most older adults are active and healthy and research suggests that future generations will pursue a wide variety of leisure time interests. Following retirement, most aged individuals experience a dramatic increase in their leisure time which will allow them to travel and take up new hobbies. As noted by the National Restaurant Association (1988), older persons represent a growing proportion of the patrons in foodservices establishments. They may become "the driving force," behind the growth of the industries which focus upon recreation and leisure activities.

TECHNOLOGY

New technologies such as microwave ovens and vacuum sealed, shelf-stable foods can be a real plus for elderly individuals who live alone and cannot or do not cook for themselves. Although these items are more expensive than traditional food supplies, they may be helpful to some aged individuals with physical disabilities in spite of their cost.

Some evidence suggests however, that older adults may shy away from these products because they are unfamiliar to them and older adults prefer to adhere to traditional methods of preparation (Schlenker, 1984). In general, very little research has been conducted regarding the impact that new technologies have had on the dining patterns of older adults. Reaburn, Krondl & Lau (1979) studied the social determinants of food selection behaviors and found that although "convenience of preparation" was correlated with food use, other factors may have more of an impact on food selection decisions. Food preferences are developed over a lifetime so the familiarity of the item has a lot of influence upon the selection behaviors of older adults.

HEALTH MONITORING BEHAVIOR

Health monitoring behavior refers to the interventions or protective health behaviors that individuals carry-out in an effort to prevent or alleviate illness. Hayes & Ross (1987), developed the Health Behavior Model in an attempt to explain why some people use health services and engage in protective health behaviors in the absence of symptoms or illness. As part of their efforts to expand upon this model, Hayes & Ross studied the eating habits of a random sample of adults of all ages living in Chicago. They hypothesized that "concern with appearance" as well as "health beliefs" influence individuals' eating habits. From their research they concluded that "older people, married people and women are significantly more likely to have good eating habits than are the younger people, the unmarried and the men," (Hayes & Ross, 1987, p. 126). Given these findings it is reasonable to suggest that concerns about personal health and special therapeutic diets may influence the dining habits of older adults when eating away from home.

THE FOODSERVICE INDUSTRY'S RESPONSE TO OLDER ADULTS

Although organizations such as the National Restaurant Association are aware of the growing number of older adults and have become more sensitive to the needs of individuals in this segment of the population, the foodservice industry in general has done very little research on the dining patterns of older consumers. Most of the programs which are targeted towards aged individuals focus upon an economic approach to winning their patronage. "Early bird" specials, senior citizens' discounts, free beverages and in some cases smaller portion sizes offered at a decreased price have become the standard techniques utilized by foodservice operators when attempting to draw older adults into their establishments. A thorough review of all the foodservice industry trade publications revealed that restaurants have been using these same techniques for over ten years. Although a few firms have successfully developed more innovative marketing strategies, such as the Burger King franchise which agreed to pay the heating bill of one senior citizen per week during the winter, most have relied upon discounted menus (Nanns, 1985). For example: Friendly's Ice Cream Co. of Massachusetts; Mr. Steak restaurants; Sheraton Hotel restaurants; King's Table; Sambo's; The International House of Pancakes chain; Shoney's, Wendy's , Marriott restaurants, and Denny's, as well as many other private restauranteurs have developed special promotions for older adults (Nanns, 1985). Nevertheless, none of these techniques address the health and nutrition concerns of aged individuals.

The "Heart Healthy" dining program developed by the American Heart Association is offered by many restaurants nationwide but very little information has been published regarding consumers' response to this program. As mentioned previously, Paul, Novascone, Ganem & Wimme (1989) surveyed restaurant patrons and reported that 87% of the participants expressed a desire to follow a "heart healthy diet." They also found that

more than half of the respondents in their sample were trying to sustain this behavior when dining out.

In Colorado, an organization called Healthmark Centers Inc. has an extensive program which is designed to train individuals about nutrition and menu planning. They teach restauranteurs and kitchen staff as well as individual clients about nutrition and the cooking techniques which may be used to accommodate diners with special diet-related health concerns. When requested, the organization's staff will even do a nutrient analysis of the individual food items on a restaurant's menu . According to the information which has been published by the local newspapers in Colorado, this program has been enormously successful (Eicher, 1989; Knox, 1988; Weddell, 1989). It has been popular with diners of all age groups but it is only available in the Denver Area.

SUMMARY

In this chapter an overview of the literature on the dining patterns of older adults was presented. From this research it has been shown that taste is the most influential factor governing the food selection decisions of most aged adults. However, many aged individuals also take their nutrition and health concerns into consideration when choosing their meals (Brown, 1976; Krondl, et al., 1982; McIntosh, et al., 1990). Considering the results of these and other studies which have examined the food intake and consumption patterns of older adults, it is reasonable to conclude that older adults have an active interest in maintaining good nutritional habits and that their dining patterns are influenced by their health concerns.

Given the changing demographics of the U.S. population, adults over 65 years of age will represent an increasing proportion of the customer base for operators in the foodservice industry. Therefore these operators need to know more about how the health

and nutrition concerns of aged individuals impact their dining patterns when dining away from home. Research that identifies the factors which impact the restaurant dining patterns of older adults is needed in order to determine how the foodservice industry can better accommodate the growing number of individuals over 65 years of age.

CHAPTER III

METHODOLOGY

INTRODUCTION

As the percentage of the American population over 65 years of age continues to increase, operators in the foodservice industry will find that older adults represent an increasing proportion of their customer base. Nevertheless, very few empirical studies have been devoted towards analyzing the food intake and consumption patterns of older adults when dining in restaurants. To date, most of the published research has focused upon their at-home eating behaviors. In order to better accommodate the growing number of individuals over 65 years of age, operators in the foodservice industry should attempt to develop an understanding of the factors that may impact the restaurant dining patterns of the elderly. This is an exploratory and descriptive research study designed to investigate the restaurant dining patterns of a representative sample of individuals aged 65 and older.

RESEARCH QUESTIONS

The following questions were developed by the author as the foundation for planning this research study.

1. What are the relationships between the socio-demographic characteristics of adults over 65 and their eating patterns when dining out?
2. What type of restaurants do older adults select most often when dining out?
3. Do age-related health concerns and/or therapeutic diets influence older adults' restaurant selections?
4. Do age-related health concerns and/or therapeutic diets influence the dining patterns of older adults when they select their meals from restaurant menus?

5. Do the menu selections/consumption patterns of older adults with health concerns and/or therapeutic diets vary significantly from those of aged individuals who do not have these concerns?

6. What are some of the specific features of the products and/or services offered by foodservice establishments that are important to adults over 65 years of age?

7. With regard to restaurant dining, are the attitudes and opinions of older adults with health concerns and/or therapeutic diets significantly different from those of aged individuals who do not have these concerns?

Data collected from the survey respondents along with information presented in the review of the literature will be used to address each of these research questions.

RESEARCH OBJECTIVES

The primary objectives of this study which evolved from the aforementioned research questions are listed below:

1. To identify selected aspects of the physiological, psycho-social, and lifestyle factors associated with aging and to assess their impact on the food intake and consumption patterns of older adults (over 65).

2. To analyze the restaurant dining patterns of a representative random sample of older adults (65 years of age and older).

3. To determine if there is a relationship between the socio-demographic characteristics of a representative random sample of individuals aged 65 and older and their restaurant dining patterns.

4. To determine if the restaurant dining patterns of a representative random sample of older adults are influenced by their health conditions and therapeutic diets.

5. To identify some of the specific features of foodservice products and services that are most important to older adults.

OPERATIONAL DEFINITIONS

In order to determine how various factors associated with aging influence the restaurant dining patterns of older adults (65+ years of age), the variables of interest have been defined in the following section.

Considering that factors such as age, race, gender, income, educational level, and employment status, may have an impact on an individual's ability and/or inclination to dine out in restaurants. Thus the socio-demographic characteristics of the sample population were selected as the *independent variables*. The dining patterns of the respondents were designated as the *dependent variables* of interest. As described in the introductory chapter, the phrase "dining patterns" includes both the food intake and the consumption behaviors of individuals. For purposes of this study, *food intake* was quantified by four different measures: (1) entree items most often selected; (2) preferred method of preparation for entrees; (3) frequency of dessert purchases; and (4) type of dessert most often selected. *Consumption patterns* were quantified as: (1) type of restaurant patronized for each meal period; (2) frequency of restaurant visits per meal period; (3) dollar value of purchases per meal period; and (4) restaurant dining companions.

In the previous chapter, it was established that nutritional knowledge and personal attitudes about health and nutrition have an influence on the food intake of older adults when dining at home (Grotkowski & Sims, 1978). Although this study was not designed to evaluate the nutrition knowledge of older adults, it is fairly reasonable to assume that health concerns and therapeutically prescribed diets may affect the restaurant dining patterns of older adults. Special dietary needs may in fact function as a moderating variable in the relationship between the socio-demographic factors and dining patterns of aged individuals. In order to test this assumption, the survey respondents were divided into two groups: those who indicated that they were on therapeutically prescribed diets and those who said they were *not* on diets.

RESEARCH HYPOTHESES

In order to address the aforementioned research questions, four working hypotheses were developed.

HYPOTHESIS I

There are no relationships between the socio-demographic characteristics of older adults (65+ years of age) and their restaurant dining patterns.

Two sub-hypothesis were developed in order to address each component of an individual's dining patterns:

Hypothesis I a

There are no relationships between the socio-demographic characteristics of older adults (65+ years of age) and their *menu selections* when dining in restaurants.

Hypothesis I b

There are no relationships between the socio-demographic characteristics of older adults (65+ years of age) and their *consumption patterns* when dining in restaurants.

HYPOTHESIS II

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants.

Four sub-hypotheses were developed in order to address each measure used to define the term 'menu selections':

Hypothesis II a

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants as measured by*type of entree selections.*

Hypothesis II b

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants as measured by *preparation method.* for entree selections.

Hypothesis II c

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants as measured by *frequency of dessert consumption.*

Hypothesis II d

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants as measured by *type of dessert selections.*

HYPOTHESIS III

There are no relationships between the health concerns (therapeutic diets) and *consumption patterns* of older adults when dining in restaurants.

In order to more effectively address the activities which have been defined as consumption patterns, four sub-hypothesis were developed:

Hypothesis III a

There are no relationships between the health concerns (therapeutic diets) and *consumption patterns* of older adults as measured by *frequency of restaurant patronage per meal period.*

Hypothesis III b

There are no relationships between the health concerns (therapeutic diets) and *consumption patterns* of older adults as measured by *type of restaurant selected per meal period..*

Hypothesis III c

There are no relationships between the health concerns (therapeutic diets) and *consumption patterns* of older adults as measured by *type of dining companion.*

Hypothesis III d

There are no relationships between the health concerns (therapeutic diets) and consumption *patterns* of older adults as measured by *dollar value of restaurant purchases per meal period.*

HYPOTHESIS IV

There are no differences in the specific features of restaurants (products and services) that are important to older adults with health concerns (therapeutic diets) and those that are important to older adults who do not have health conditions (therapeutic diets).

SURVEY INSTRUMENT

Mail surveys, as opposed to other methods of data collection, tend to capture a larger, more diverse group of respondents. Thus, it was anticipated that a mail survey would yield a sample which would be more representative of the target population. In addition, a self-administered research instrument provides the respondents with more time to think about their responses. Since the participants were encouraged to answer the questionnaire at their own convenience, they may have been able to give each item more careful consideration than if they had been given a time limit. Generally speaking, mail surveys are a quick, inexpensive, efficient, and accurate method of assessing information about the population being studied (Zikmund, 1991). Furthermore, they are highly standardized thereby reducing the effects of interviewer bias.

A five part, structured questionnaire was used to obtain information about the menu selections and consumption patterns of the respondents when dining in commercial foodservice establishments (refer to Appendix A). The research instrument developed by Nanns (1985), provided the basic framework for the questionnaire which was used in this study. The "Nutritional Questionnaire for Older Adults," devised by Fanelli & Abernethy (1986), also served as a reference during the process of refining the questionnaire. The majority of the questions on the survey were of the multiple choice variety and did not require a high level of education or training to comprehend. However, preliminary testing of the draft version of the questionnaire revealed that some aged individuals may not be familiar with the terminology which is frequently used for survey research. Therefore, the number of possible responses for each question was reduced and more detailed instructions were provided.

While the questionnaire was somewhat lengthy (5 pages in total), the questions were carefully worded and arranged so that they would be easy for the respondents to read.

A description of the material which was covered in each section of the questionnaire is provided below.

PART I RESTAURANT DINING (Consumption Patterns)

There were seven questions (#1-7) in Part I of the survey instrument. They were designed to obtain the information which was used to analyze and describe the restaurant consumption patterns of the respondents. Each of the participants in the study, were asked to base their responses on their dining patterns within the preceding thirty day period. For each meal period, they were asked to indicate: the frequency with which they used foodservice establishments; the type of establishment that they preferred to patronize and how much money they usually spent. They were also asked to indicate who they usually dined out with; the main reason why they went out to eat; their usual method of transportation and the average distance that they travelled to most restaurants. The data generated from this section were treated as part of the dependent variables.

PART II RESTAURANT FEATURES

The questions (#8-30) in this section were intended to determine if there were specific features that the respondents believed were important to them when choosing a place to eat. There were fifteen questions in this section, which were designed to assess the way that respondents felt about the specific attributes of foodservice establishments. The items on this list of restaurant features covered almost every aspect of the dining experience with the exception of food quality which was omitted because as stated by Lewis (1980, p. 102), "quality claims are so prevalent and often misused in restaurant advertising that they lack credibility."

In the instructions for this part of the questionnaire the respondent was requested to rate the importance of each restaurant feature on the following scale:
1=not important; 2= somewhat important; 3=important; 4= very important. A four point scale was selected instead of the traditional Lickert type scale because it forced the respondents to choose between the responses rather than default to a middle point on the scale.

In addition to the questions on specific restaurant features, the participants were also asked to respond to five statements about what restaurants could do to be more accommodating of older adults. They were requested to state the extent to which they agreed or disagreed with each of the statements. The responses to these questions together with the data obtained from the first fifteen items permitted the testing of some of the commonly held beliefs about why older adults tend to patronize specific types of foodservice establishments.

There were also two rather unrelated questions about restaurant dining in this section. They were included in order to obtain information which was used to develop a profile of the dining patterns of survey respondents. One of the questions (#23) specifically asked the respondent to indicate whether his/her health concerns and/or special dietary needs influenced his/her choice of restaurants. Unfortunately, there was no way to assess whether or not the respondents' answers were in fact a reflection of their actual behavior. Nevertheless, this proved to be an interesting question.

Question #25 in Part II addressed the issue of customer satisfaction. The respondents were asked to indicate how satisfied they were, in general, with their restaurant experiences for each meal period within the thirty day period prior to when they received the questionnaire. Although 'satisfaction' is a subjective concept, this question

was included so that the responses of the satisfied and unsatisfied participants could be compared.

PART III DINING HABITS (Menu Selections)

This part of the questionnaire focused on the menu selections of the respondents when dining in restaurants. Although the four questions in this section are relatively simplistic, a more detailed analysis of their specific menu selections was beyond the scope of this study. The questions were designed to provide a general idea of the kinds of items that older adults believe they order most often. First, they were asked to indicate how often they had ordered five different types of entree items. Then they were asked to indicate which method of preparation they chose for each type of entree. The last two questions in this section were designed to assess their preferences for dessert items. These items were included because it is a commonly held belief that older adults like sweet desserts and order them frequently. The data collected from this section along with the information about the consumption patterns of the respondents (Part I), served as the dependent variables.

PART IV HEALTH STATUS

There were eleven questions (#35-45) on the survey instrument which were designed to assess the health status of the sample population. The information obtained from these questions were used to assess the impact that health concerns and /or special therapeutic diets may have on the dining habits of older adults. The dining patterns of the respondents with health concerns and/or special therapeutic diets were compared with those of the respondents who did not have health problems and/or special diets. The data collected from this section were used to discuss the relationships between the dependent and independent variables.

PART V GENERAL INFORMATION (Socio-demographic Information)

The questions in this section (#46-57) were designed to obtain basic information about the socio-demographic characteristics of the respondents. During the statistical analyses these data were treated as the independent variables. Each participant was requested to provide: date of birth; gender; race; marital status; educational level; employment status; living arrangement; usual dining companions and annual income level. In order to test some of the relationships which have been established by previous research regarding the eating habits of older adults, each respondent was also asked to give his/her approximate height and weight.

The information obtained from Part V of the questionnaire was used to evaluate the validity and reliability of the survey instrument. In addition the data were used to determine if the sample population was comparable with the rest of the U.S. population over 65 years of age.

INSTRUMENT TESTING

The original draft of the survey was reviewed by experienced researchers in the fields of: nutrition; statistics; hotel, restaurant and institutional management, and medical research. Several revisions in the wording and structure occurred before the instrument was tested with four individuals over 65 years of age. In response to their recommendations, further revisions were made so that the questionnaire would be ready for pre-testing with a larger group of aged individuals.

The revised draft of the survey instrument was pre-tested with a random sample of approximately twelve individuals (over 65 years of age), during the month of August 1990.

The reliability and validity of the survey instrument were assessed based upon the results of this pre-test. The outline of the procedures used for pre-testing the questionnaire follows:

PHASE 1

The subjects for the pre-test (15 people) were obtained via a cover letter requesting their participation in the testing phase of the study. The purpose of the research project was described and they were informed that their contributions would be important to the success of the project. The questionnaires which were attached were almost identical to the final draft as it appears in Appendix A with the exception of the following statement which was added at the end:

If I may have your permission to contact you about this study, please provide your phone number below.

Phone number_____ Your initials_____

The subjects who were willing to participate in the pre-test completed the survey and returned it for review.

PHASE 2

As soon as ten usable surveys were received and reviewed, the test subjects were contacted by telephone. As each subject was contacted, the purpose of the call was explained and their cooperation was politely requested. They were told that the caller was following up on the research study in which they had agreed to participate. The researcher then proceeded to ask them a few questions about their restaurant dining patterns, following the same format as the first part of the questionnaire (refer to Appendix C for a copy of the phone interview).

RESULTS OF THE PRE-TEST

Before the final draft of questionnaire was mailed out to the sample population in Virginia, it was pre-tested with a small group of older adults. The sample for the pre-test was obtained from a local Senior Citizens' Center in Lexington, Kentucky. Fifteen questionnaires along with self-addressed envelops were distributed to a group of adults ranging in age from 55-73 years. Twelve out of the original fifteen were returned but one was not usable, thereby yielding a response rate of 73.33%. All of the surveys were reviewed for completeness and if permission was granted, a follow-up interview was conducted by telephone. Upon completing the pre-test procedures, a few minor changes to the survey instrument were deemed necessary. More detailed instructions were added at the beginning of the questionnaire and some of the questions were modified so that they could be laid out differently. These changes thereby improved the way that the survey instrument read (refer to Appendix D for a copy of the final version). The last page was also changed because it was determined that a separate return envelop should be included with each questionnaire. It had previously included instructions for folding the pages into thirds in order to create a return envelop.

VALIDITY AND RELIABILITY

The results of the pre-test were used to assess the reliability of the survey instrument. Reliability is an assessment of the consistency of a measurement instrument (Guy, Edgley, Arafat, & Allen, 1987). That is, the degree to which the measurement instrument is free from errors on repeated measures of the same object. In order to determine if the questionnaire was a reliable measure of the respondents' dining patterns, each participant's written responses were compared with their verbal responses to the same questions from the telephone interview. The respondents' answers to the written

questionnaire versus the phone survey yielded the same responses. In addition, each respondent's answers to questions # 27 and #29 were compared because these questions are basically assessing the same thing but worded in reverse (refer to Appendix D for a copy of the final questionnaire). Respondents who agreed with question # 27 should have disagreed with question #29 and vice versa. In the pre-test, 54.5% of the respondents understood the relationship between the two questions and rated them as opposites. This percentage was not as high as had been anticipated but it does indicate comprehension on the part of the respondents. A review of the data from the actual survey revealed that 68.7% of the respondents (n=303) agreed with question # 27 and 46.8% disagreed with question #29. Ideally these percentages should have been equal, however, these figures were considered to reasonable given the explanatory nature of this research. Although Crochbach's alpha was also considered as a possible test for internal consistency (reliability), it was not appropriate for this type of categorical data. In conclusion, it was determined that the survey instrument was a reliable measure for obtaining information about the dining patterns of the respondents.

The validity of a survey instrument refers to how well it measures what it purports to measure (Guy, et al.,1987). Although there is no way to directly test the validity of a survey instrument, several techniques may be used to indirectly establish the validity of a measure. The face validity of the survey instrument was established by individuals who were familiar with material which was to be assessed. External validity is the ability to generalize the results of the research to groups beyond the population under study (Zikmund, 1991). In order to ensure the external validity of the questionnaire used in this research, a random sample of older adults were selected from the population of interest. The internal validity was assessed by comparing the respondents' answers with information about empirically established relationships regarding older adults. In 1978,

Templeton documented the relationships between selected demographic variables and the body weight of aged individuals. In her research with 680 elderly adults, she utilized the equation developed by Khosla and Lowe (1967) to assess the desirable body weight for her subjects. $I=(W/H^2)$, W=weight in pounds, H=height in inches, I=the index used to determine if subjects are at their desirable body weight. The following parameters were developed by Templeton to be used as guidelines for interpreting the "I scores":

Underweight male < 0.029	Overweight male > 0.035
Underweight female < 0.027	Overweight female > 0.033

The aforementioned equation and the guidelines were utilized to assess the body weights of the individuals in the pre-test group. This information was then compared with the demographic data for each respondent to determine if the relationships described by Templeton were true for the pre-test subjects. The analysis revealed that 9 out of the 11 individuals fit into the model reported by Templeton. An examination of the actual survey data also indicated that the relationships between the socio-demographic variables were compatible with what has been reported in the literature. Thus, it was possible to conclude that they survey instrument was a reasonably valid measurement tool.

SAMPLE SELECTION AND DATA COLLECTION PROCEDURES

A random sample of 1000 non-institutionalized older adults (aged 65 and older) residing in the state of Virginia were the subjects for this study. The names and addresses of these individuals were purchased from the Alvin B. Zeller Company;* a New York firm specializing in mailing lists. The sample of names on mailing list was stratified according to population density within each zip code region in the state of Virginia. According to a sales representative at Alvin Zeller, the Company gets their figures from the National

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* Alvin B. Zeller Inc. 224 Fifth Avenue New York, N.Y. 10001, phone 1-800-223-0814

Census Data and they are updated every year to adjust for changes in the population. He did however caution me that samples of individuals over 65 years of age are likely to have a higher percentage of errors than other groups because this group experiences a good deal of turnover.

Data collection began in the fall of 1990. The date for the first mailing of the questionnaires was October 10, 1990. The general procedures for the data collection process have been outlined in the following paragraphs.

PHASE 1

For the first mailing, a random sample of 1000 names were selected from the mailing list of older adults. The cover letter which was enclosed with each questionnaire explained the purpose of the study and encouraged the recipient to participate. The name and telephone number of a contact person were also provided in case the subjects had any problems or questions while completing the questionnaire.

PHASE 2

Approximately two weeks following the date of the first mailing (@ October 22th), another group of letters and questionnaires were sent out. Approximately 15-20 additional questionnaires were sent out because several of the envelops sent in the first group were returned to the sender within a very short period of time. The reason for the returns was undetermined, therefore the decision was made to replace those envelopes that came back with other names on the mailing list.

PHASE 3

As stated in the original research proposal, a follow-up postcard was to be sent out to each of the individuals in the sample (1000) approximately

two weeks after the questionnaires were mailed. The purpose of postcard was to politely remind the subjects about the study and to encourage them to complete their questionnaires if they had not already done so. Shortly after the initial mailing was sent off however, it became obvious that the response rate was better than expected and the reminder postcard was not going to be feasible due to limited funds available for printing and additional postage (the initial mailing was priced at .37 per envelop rather than the budgeted figure of 25)

DATA ANALYSIS

As they were returned, each questionnaire was coded and information was entered into a database program on a Macintosh personal computer. Approximately three months after the date of the initial mailing, the computer coded data were analyzed using the SAS program on the mainframe computer at University of Kentucky. A variety of statistical techniques were used to analyze and interpret the data.

In order to develop a demographic profile of the survey respondents, the information from the last part of the questionnaire was expressed as frequencies, means and medians wherever appropriate. Numerous tables were also been developed from this information. Chi-square tests of independence were used to compare information about the independent variables (the socio-demographic data) with information about the dependent variables (the respondents' dining patterns). These types of tests were particularly appropriate for this study because it was exploratory in nature. If no relationships exist between the independent and dependent variables, one would expect to find Chi-square statistics that do not exceed the critical value for the degrees of freedom in each relationship. T-tests are appropriate when trying to test a hypothesis about the mean scores

of two groups. In this case, they were used to determine if the mean scores for one group of subjects (respondents *with* health concerns and/or special diets) were significantly different from the mean scores of another group (respondents *without* health concerns/special diets).

The statistical tests which were used for each hypotheses have been outlined in the section that follows:

HYPOTHESIS I

The Chi-square test of independence was employed in order to assess the relationships between the socio-demographic variables and the dining patterns of the survey participants. Each of the socio-demographic variables were crosstabulated with information about both the menu selections and consumption patterns of the respondents.

HYPOTHESIS II

A series of Chi-square tests for independence were utilized to evaluate each of the sub-hypotheses for Hypothesis II. The respondents' answers to question #37 (their special diets) and question #23 (their health concerns) were crosstabulated with information about the types of entrees and desserts they selected when dining out (questions #31-34).

HYPOTHESIS III

Once again, the Chi-square test for independence was used for the analysis of each sub-hypotheses. Information about the respondents' health concerns and special diets (their responses to question #23 and question #37) was crosstabulated with information about their restaurant consumption patterns (survey questions #1-5).

HYPOTHESIS IV

A series of separate t-tests were performed in order to determine if there were any differences in the restaurant features which are important to aged individuals with health concerns or special diets and the features which are important for individuals who do not have these concerns.

LEVEL OF SIGNIFICANCE

Due to the exploratory nature of this research endeavor, all of the statistical tests for data analysis were evaluated at the .10 (alpha value) level of significance. In some cases a .05 or .001 alpha value was appropriate and they have been noted on the tables in Chapter IV.

SUMMARY

In this chapter, the variables of the study were defined and four primary working hypotheses (along with 10 sub-hypotheses) were developed. The survey instrument was described and the procedures for administering the questionnaire were outlined. The statistical techniques which were used to analyze the data have also been discussed. The results of the statistical analysis are presented in the following chapter.

CHAPTER IV

RESULTS

INTRODUCTION

In this chapter the results of the data analyses are presented along with a thorough discussion of the testing that was done for each hypothesis. The data generated from of all the statistical tests are presented in tabular form with each section preceded by a discussion of the significant findings. In the first half of the chapter, the descriptive statistics are covered (i.e. the frequency counts and response rates) for each question on the survey instrument. The results of the chi-square analyses are reviewed in the second half of the chapter.

RESPONSE RATE

Three hundred and fifty six questionnaires were returned out of the initial 1,000 surveys mailed. Of those received, 18 had never been opened or were incomplete and had to be discarded. Furthermore, 35 of the respondents were under 65 years of age so they too had to be excluded from the data analyses. Thus, the sample yielded 303 usable responses for a final response rate of 30.3%.

DESCRIPTIVE DATA

The descriptive data collected from Part V of the survey questionnaire are presented in Tables 4 and 5. The individuals in the sample (n=303) ranged in age from 65-87 years with a mean of 72.2 years. The majority were white (94.7%) and male (59.4%). Whereas most of them were married (64.7%), approximately one quarter (25.7%) were widowed . Although 82.5% of the respondents were retired, 7.3% continued to work full time and

another 7.3% indicated that they were working on a part time basis (n=302). Almost ninety three percent of the group indicated that they had at least a high school level education (n=301). Approximately, thirty percent had attended college and 14.9% reportedly went on to graduate school. The median income level (pre-tax) of the respondents fell between $25,001-30,000 annually, with the largest percentage (24.1%) of the responses in the $30,000-50,000 range (n=268).

The data which are summarized in Table 5 focuses on the living arrangements and at-home dining patterns of the study participants. Most of the respondents (59.1%) reported living in a household with one other person (n=303). As illustrated in Table 5, their household companion was likely to be over the age of 65. Of those individuals who answered the question, 81% indicated that at home they " often or always" dined with their spouse (n=232). Although they did not eat with their children as frequently, 21.8% of 243 reported that they ate with them "often or always" and they dined with them more often than with friends or other relatives.

TABLE 4. DEMOGRAPHIC PROFILE OF THE SURVEY RESPONDENTS

Variable	Number	Percent
AGE		
65-69 years	129	42.6
70-74 years	83	27.4
75-79 years	59	19.5
80-84 years	25	8.3
85-89 years	7	2.3
Total	303	100
GENDER		
Female	123	40.6
Male	180	59.4
Total	303	100
RACE		
White	287	94.7
Black	15	5.0
Other	1	0.3
Total	303	100
MARITAL STATUS		
Single	15	5.0
Married	196	64.7
Divorced	14	4.6
Widowed	78	25.7
Total	303	100
EDUCATION		
No Response	2	0.7
Elementary School	8	2.6
Junior High School	13	4.3
Senior High School	115	38.0
Technical School	30	9.9
College	90	29.7
Graduate School	45	14.9
Total	303	100
EMPLOYMENT STATUS		
No Response	1	0.3
Full Time	22	7.3
Part Time	22	7.3
Unemployed	8	2.6
Retired	250	82.5
Total	303	100
ANNUAL INCOME BEFORE TAXES		
No Response	35	11.6
Less than $10,000	13	4.3
Between $10,001-20,000	57	18.8
Between $20,001-30,000	67	22.2
Between$30,001-50,000	73	24.1
More than $50,000	58	19.1
Total	303	100

TABLE 5. LIVING ARRANGEMENTS AND AT-HOME DINING PATTERNS OF SURVEY RESPONDENTS

Variable	Number	Percent
NUMBER OF PEOPLE LIVING IN HOUSEHOLD		
No Response	6	2.0
One	94	31.0
Two	179	59.1
Three	18	5.9
Four	6	2.0
Total	303	100
LIVING WITH INDIVIDUALS UNDER 65 YEARS OF AGE		
No Response	8	2.6
Yes	64	21.1
No	231	76.2
Total	303	100
DINING COMPANIONS FOR MEALS EATEN AT HOME		
• **With Spouse**		
No Response	71	23.4
Never	40	13.2
Sometimes	4	1.7
Often	19	6.3
Always	169	55.8
Total	303	100
• **With Children**		
No Response	60	19.8
Never	36	11.9
Sometimes	154	50.8
Often	46	15.2
Always	53	21.8
Total	303	100
• **With Relatives**		
No Response	68	22.4
Never	38	12.5
Sometimes	182	60.1
Often/Always	15	5.0
Total	303	100
• **With Friends**		
No Response	49	16.2
Never	38	12.5
Sometimes	182	60.1
Often/Always	15	5.0
Total	303	100

HEALTH STATUS

In Part IV of the survey instrument the respondents were asked to answer questions about the status of their physical health and the impact that it has on their dining patterns. Their responses to these questions are presented in the section that follows.

The first question in Part IV of the questionnaire requested that each respondent indicate whether they suffered from any of nine health conditions which are prevalent among adults over 65 years of age. The responses for this question are summarized in Table 6. Approximately one third of the total respondents (n=303) indicated that they suffered from arthritis, the ailment most frequently reported by the group. Hypertension was the next most prevalent health condition, with 28% of the responses (n=303). High blood cholesterol levels were reported by 27.4% of the respondents and nearly one fifth indicated that they had some form of heart condition (n=303). Renal disease was the least prevalent condition reported (3 cases total). For question #36 the respondents were asked to indicate how the aforementioned health conditions affected their diet; in some cases, however, the response rates recorded for this question did not coincide with what the respondents had indicated in question #35 (refer to Table 6). Twenty six percent of the total sample (n=303) reported that their eating habits were affected by their concerns regarding their blood cholesterol levels. Approximately 18% of the group indicated that they were consuming diets aimed at controlling hypertension. In addition, diets appropriate for reducing the risk of heart disease were reportedly consumed by 12.2% of the total sample (n=303). When considering only those individuals who reported having problems with high blood cholesterol levels (n=83), 94.0% indicated that their eating habits were affected by this problem. Of the people with food allergies (n=14), ninety three percent reported that their eating were affected by their sensitivities. Ninety two percent of the

respondents who were diabetics (n=36) reported that they were modifying their diets as a result of this health condition.

More than one third of the respondents answered "yes" to the question, "are you on a special diet of any kind?" (n=113). Table 7 contains the data which were collected for this item. Unfortunately, it was not possible to compare the responses for question #36 with the responses for question #36 because many of the study participants appeared to have multiple dietary restrictions. When comparing the responses for question #37 with those for #23, it was discovered that 63% of the individuals on special diets (n=90) also felt that their health concerns influenced their choice of restaurants (question #37).

When asked to indicate what type of special diet they were on 41.1% of the respondents who said "yes" to question #37 indicated that they were on low-fat diets. As illustrated in Table 8, 27.4% of the individuals who answered this question were trying to reduce the amount of sodium level in their diets. Many of the respondents (21%) were on weight loss diets. Twenty four of the fifty people who gave a second choice response for question #38, indicated that they were on low-fat diets (48%). As a third choice, one third said they were reducing the fat content of their diet (n=8).

As illustrated in Table 9, most of the individuals who were on some type of special diet (n=95) indicated that this diet was recommended by a physician. As a second response to the question of who recommended their special diet, many of the study participants indicated that they had received information about their diets from a dietitian (n=21). Unfortunately, it was not possible to compare the responses for question #37 (Table 7) with the responses for question #39 (Table 9) because the number of responses for the former does not equal the number for the latter.

TABLE 6. RESPONDENTS' HEALTH CONDITIONS AND CORRESPONDING EFFECT ON THEIR DIETS

Do you have any of the following health conditions?	YES		NO		No Response	
	No	%	No.	%	No.	%
Diabetes	36	11.9	161	53.1	106	35.0
Arthritis	90	29.7	119	39.3	94	31.0
Hypertension	85	28.1	123	40.6	95	31.4
Heart problems	62	20.5	139	45.9	102	33.7
Cancer	8	2.6	171	56.4	124	40.9
High blood cholesterol	83	27.4	129	42.6	91	30.0
Gastrointestinal problems	44	14.5	150	49.5	109	36.0
Renal disease	3	1.0	176	58.1	124	40.9
Food Allergies	14	4.6	167	55.1	122	40.3
Do any of the following health conditions influence your eating habits?	**YES**		**NO**		**No Response**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Diabetes	33	10.9	54	17.8	216	71.3
Arthritis	21	6.9	84	27.7	198	65.3
Hypertension	53	17.5	64	21.1	187	61.4
Heart problems	37	12.2	64	21.1	202	66.7
Cancer	4	1.3	68	22.4	231	76.2
High blood cholesterol	78	25.7	48	15.8	177	58.4
Gastrointestinal problems	34	11.2	61	20.1	208	68.6
Renal disease	4	1.3	65	21.5	234	77.2
Food Allergies	13	4.3	62	20.5	228	75.2

TABLE 7. RESPONDENTS' SPECIAL DIET STATUS

Are you on a special diet of any kind?	Number	Percent
No response	11	3.6
Yes	95	31.4
No	197	65.0
Total	**303**	**100**

TABLE 8. RESPONDENTS' DIETARY RESTRICTIONS*

TYPE OF DIET	FIRST RESPONSE		SECOND RESPONSE		THIRD RESPONSE	
	Number	%	Number	%	Number	%
No response	197	65.0	253	83.5	280	92.4
Weight loss diet	20	6.6	1	0.3	1	0.3
Diabetic diet	17	5.6	9	3.0	4	1.3
Low sodium diet	26	8.6	10	3.3	6	2.0
Low potassium diet	1	0.3	1	0.3	6	2.0
Low fat diet	39	12.9	24	7.9	8	2.6
Fluid restricted diet	0	0	1	0.3	2	0.7
Bland diet	3	1.0	3	1.0	2	0.7
Soft or mechanically altered diet	0	0	0	0	0	0
Total	**303**	**100**	**303**	**100**	**303**	**100**

* The information in this table shows the first, second and third choices of the respondents according to the order in which they were circled on the survey.

TABLE 9. SPECIAL DIET RECOMMENDATIONS*

Individual who recommended your diet	FIRST RESPONSE		SECOND RESPONSE	
	Number	%	Number	%
No response	195	64.4	273	90.1
Physician	85	28.1	1	0.3
Dietitian	9	3.0	21	6.9
Own idea	12	4.0	6	2.0
Diet Center	1	0.3	0	0.0
Book/magazine	1	0.3	2	0.7
Total	**303**	**100**	**303**	**100**

* The information in this table shows the first and second choices of the respondents according to the order in which they were circled on the survey.

PHYSICAL LIMITATIONS

In contrast to the way that many people stereotype older adults, most of the individuals who responded to this survey did not report severe physical impairments. When questioned about their physical mobility, 81.4% of the respondents who answered the question (n=290), indicated that they had no difficulty walking (Table 12). Of those who had some difficulty getting around (n=54), most responded that "walking slowly" was their limitation. As depicted in Table 13, sixteen people used a cane for assistance and one person was confined to a wheelchair. In addition, ten people circled "none of the above" as their response, which may mean that they were using another type of device (other than a walker) for assistance.

As far as other physical limitations, less than 7% of the respondents (n=303) indicated that they had difficulty chewing their food (Table 10). However, corrective lenses were important to the majority of the group. Almost eighty five percent of the sample (n=290) wore glasses (Table 11).

When rating their overall health, seventy four percent of the respondents reported that they were in "good "or "very good" health (n=292). Less than 4% of the group indicated that their health was poor (Table 14). As illustrated in Table 15, 42.2% of the respondents who answered the question (n=296) felt that they were "somewhat overweight," and half of them indicated that they were "at about their ideal body weight."

TABLE 10. RESPONDENTS' MASTICATORY ABILITIES

Do you have difficulty chewing?	Number	Percent
No response	15	5.0
Yes	21	6.9
No	267	88.1
Total	**303**	**100**

TABLE 11. RESPONDENTS' USE OF CORRECTIVE LENSES

Do you need corrective lenses to read?	**Frequency**	**Number**
No response	13	4.3
Yes	245	80.9
No	45	14.9
Total	**303**	**100**

TABLE 12. RESPONDENTS' MOBILITY LEVEL

Do you have difficulty walking?	Number	Percent
No response	13	4.3
Yes	54	17.8
No	236	77.9
Total	**303**	**100**

TABLE 13. LEVEL OF ASSISTANCE REQUIRED FOR MOBILITY

Type of Assistance Needed	Number	Percent
No response	240	79.2
Use a cane	16	5.3
Use a walker	0	0.0
Use a wheelchair	1	0.3
Walk with crutches	2	0.7
Walk slowly	31	10.2
None of the above	10	3.3
More than one response	3	1.0
Total	**303**	**100**

TABLE 14. RESPONDENTS' SELF-ASSESSMENT OF THEIR OVERALL HEALTH STATUS

Respondents' self-evaluation of their health	Frequency	Percent
No response	11	3.6
Very good	73	24.1
Good	143	47.2
Fair	65	21.5
Poor	11	3.6
Total	**303**	**100**

TABLE 15. RESPONDENTS' SELF-ASSESSMENT OF THEIR BODY WEIGHT

Self-assessment of body weight	Number	Percent
No response	7	2.3
Somewhat thin	21	6.9
About ideal	150	49.5
Somewhat overweight	125	41.3
Total	**303**	**100**

RESTAURANT CONSUMPTION PATTERNS

In the following section, information about the restaurant consumption patterns of the survey respondents has been summarized by meal period. Table 16 illustrates the frequency of the respondents' restaurant visits per meal occasion. The average cost of restaurant meals purchased by the survey respondents is summarized in Table 17. Table 18 contains information about the type of restaurant patronized by the respondents for each meal occasion. Table 19 illustrates with whom the respondents' were most likely to have dined out during the previous thirty day period.

Breakfast. As illustrated in Table 16, many of the respondents (41.5%) who answered the first question, indicated that they had not eaten out for breakfast during the previous thirty day period (n=279). Of those who did eat out for breakfast (53.8% of the total sample), 34% ate out at least once per week and 22.1% ate out 2-3 times during the month. Most of the people who ate out for breakfast patronized fast food restaurants (46.1%), with another 26.5% of the group frequenting family style facilities (n=251). Ninety four percent of the group spent less than $5 on their breakfast (n=250).

Lunch. In general, the respondents ate out more often for lunch than they did for breakfast. Eighty five percent of the group (n=293) ate out at least once per month for lunch as opposed to 53.7% of the respondents at breakfast time. Of those who ate out for lunch, 27% ate out 2-3 times during the previous month and 44.4% ate out once/week or more (n=259). Fast food (28.9%) and full service establishments (27%) were equally popular with the respondents who ate out for lunch (n=262). Twenty two percent chose family style facilities and another 18.5% preferred cafeteria style restaurants (n=259). Approximately half of the participants who went out for lunch, did not spend more than $5 for their meal (n=259). Forty six percent spent between $5-$10 on their lunch and 5.0% spent more than $10 on their meal (n=259).

Dinner. More than ninety percent of the respondents who answered the first question indicated that they ate dinner out at least once during the previous month (n=293). Of those who ate out for dinner, approximately one third (31.7%) indicated that they had been out 2-3 times during the month (n=268). Forty percent of this group went out for dinner once per week or more. Full service restaurants were the most popular option (55.6%) among the restaurant-goers with another 18.7% patronizing family type facilities and 17.2% preferred cafeteria style establishments (n=268). Very few went to fast food restaurants (4.1%) for dinner. Forty six percent of the individuals who went out for dinner at least once during the previous month indicated that they spent between $5-$10 for dinner; another 42.2% spent between $11-$20. A small percentage (6.1%) said that they spend more than $20 at dinner time (n=293).

DINING COMPANIONS AND THEIR REASONS FOR DINING OUT

For question #4 on the survey instrument the participants were asked to indicate their most frequent dining companion(s) during the previous month and they were instructed to circle as many responses as were applicable to their situation. From the data in Table 19, it is clear that spouses were the most frequent dining companions for most of the respondents (60% of 285). Among the other first responses, relatives were selected by 18.2% of the group and another 17.2% indicated that they dined out most frequently with their friends. As a second response, 55.2% of the group listed their "friends" as their most frequent dining companions (n=116). And finally, friends were listed as the most frequent companions for the respondents who circled a third choice (n=33).

The respondents' main reasons for dining out have been summarized in Table 20. Although socialization was the reason most frequently cited by the respondents (49.2% of 287), many indicated that they went out because they did not feel like cooking

(26.1%). Approximately seven percent of the group went out to restaurants to celebrate an occasion.

RESTAURANT LOCATION AND TRANSPORTATION

As indicated in Table 21 the majority of the respondents (81%) usually travel between 1-5 miles to the restaurants that they patronize (n=281). Almost 27 percent indicated that they travel between 6 and 10 miles to dine out. Most of the respondents (81% of 269) indicated that they drive themselves to the restaurants of their choice. Table 22 illustrates the mode of transportation most often used by the survey respondents when traveling to restaurants. Seventeen percent of the people who responded to question # 7, said that they rode with someone else (n=269). Less than 2% walked or rode their bicycle; very few took a taxi or bus (0.7%).

TABLE 16. FREQUENCY OF MEALS EATEN IN RESTAURANTS

FREQUENCY	BREAKFAST		LUNCH		DINNER	
	Number	%	Number	%	Number	%
No Response	24	7.9	10	3.3	10	3.3
More than 1/week	34	11.2	66	21.8	57	18.8
Once per week	22	7.3	49	16.2	51	16.8
2-3 times/month	36	11.9	70	23.1	85	28.1
Once per month	71	23.4	74	24.4	75	24.8
Never (occasionally)	116	38.3	34	11.2	25	8.3
Total	**303**	**100**	**303**	**100**	**303**	**100**

TABLE 17. AVERAGE COST OF RESTAURANT MEALS PER MEAL PERIOD

AVERAGE COST	Number	%					
Breakfast							
No response	53	17.5					
Less than $3.00	66	21.8					
Between $3-5.00	87	28.7					
Between $6-10.00	11	3.6					
More than $10.00	2	0.7					
Not Applicable	84	27.7					
Total	**166**	**100**					
AVERAGE COST			**Number**	**%**			
Lunch							
No Response			28	9.2			
Less than $5.00			127	41.9			
Between $5-10.00			119	39.3			
Between $11-20.00			11	3.6			
More than $20.00			2	0.7			
Not Applicable			16	5.3			
Total			**303**	**100**			
AVERAGE COST					**Number**	**%**	
Dinner							
No Response					23	7.6	
Less than $5.00					15	5.0	
Between $5-10.00					121	39.9	
Between $11-20.00					111	36.6	
More than $20.00					16	5.3	
Not Applicable					17	5.6	
Total					**303**	**100**	

TABLE 18. TYPE OF RESTAURANT MOST OFTEN SELECTED FOR EACH MEAL OCCASION

RESTAURANT TYPE	BREAKFAST		LUNCH		DINNER	
	Number	%	Number	%	Number	%
No Response	51	16.8	30	9.9	23	7.6
Fast Food	77	25.4	71	23.4	11	3.6
Cafeteria	14	4.6	48	15.8	46	15.2
Family Type	44	14.5	57	18.8	50	16.5
Full Service	32	10.6	70	23.1	149	49.2
Not Applicable	85	28.0	27	8.9	24	8.0
Total	**303**	**100**	**303**	**100**	**303**	**100**

TABLE 19. MOST FREQUENT RESTAURANT DINING COMPANIONS*

COMPANION	FIRST RESPONSE		SECOND RESPONSE		THIRD RESPONSE	
	Number	%	Number	%	Number	%
No Response	18	5.9	187	61.7	270	89.1
Spouse	171	56.4	1	0.3	1	0.3
Children	33	10.9	22	7.3	2	0.7
Relatives	19	6.3	26	8.6	5	1.7
Friends	49	16.2	64	21.1	23	7.6
Alone	13	4.3	3	1.0	2	0.7
Total	**303**	**100**	**303**	**100**	**303**	**100**

* The information in this table shows the first, second and third choices of the respondents according to the order in which they were circled on the survey.

TABLE 20. RESPONDENTS' MAIN REASONS FOR DINING OUT

REASON CITED	Number	Percent
No response	16	5.3
To socialize with family and friends	149	49.2
To celebrate an occasion	22	7.3
Cannot cook	1	0.3
To save time	17	5.6
To try new foods	4	1.3
Don't feel like cooking	79	26.1
More than one response	15	4.9
Total	**303**	**100**

TABLE 21. AVERAGE DISTANCE TRAVELLED WHEN DINING OUT

AVERAGE DISTANCE	Number	Percent
No Response	16	5.3
Less than 1 mile	17	5.6
Between 1-5 miles	163	53.8
Between 6-10 miles	75	24.8
More than 20 miles	21	6.9
More than one response	8	2.6
Total	**303**	**100**

TABLE 22. MODE OF TRANSPORTATION MOST OFTEN USED WHEN DINING OUT

MODE OF TRANSPORTATION	Frequency	Percent
No response	21	6.9
Drive yourself	218	71.9
Ride with others	46	15.2
Take a bus or taxi	2	0.7
Walk or ride a bicycle	3	1.0
More than one response	13	4.3
Total	**303**	**100**

RESTAURANT FEATURES

In Part II of the survey, the respondents were asked to rate the importance of 15 different features when making a decision about where to dine. Each feature was rated according to the following scale: 1=not important; 2=somewhat important; 3=important; and 4=very important. The features were not rated against each other. The information obtained from this question is summarized in Table 23. Cleanliness and sanitation were rated as "very important" by the majority (80.2%) of the survey respondents. Other "very important" features were prompt, courteous service (50.4%) and the noise and music level (48.6%). Among the features which were rated as "important" the three with the highest percentage of responses were: large variety of menu items (53.7%); comfortable room temperature (45%); and atmosphere and decor (43%). Three features which were rated as "somewhat important" include: distance from home/location (36.9%); choice in size of portion (32.6%); and bright lights in the parking lot (27.8%). More that 60% of the respondents who answered the questions in Part II, indicated that access ramps for the handicapped were "not important" to them when deciding where to dine. They were however "very important" to 19.3% of the group, (in Table 12, 18.6% of the respondents (n=290) indicated that they had difficulty walking).

When questioned about the impact that health concerns had on their choice of restaurants, the majority of the respondents (60.2%) indicated that they did not affect their decisions (n=284). As illustrated in Table 24, 95 people felt that their health concerns had an influence on their decisions regarding where to dine. Furthermore, 51% of this group indicated that they were on specially prescribed diets. Approximately 22% of the sample (n=284) indicated that the health concerns of their dining companions affected their choice of dining establishments (Table 25).

As demonstrated by the information in Table 26, most of the respondents reported that they had been fairly satisfied with their most recent dining experiences. When questioned specifically about their breakfast meals, 68.3% of those who answered the question (n=167) indicated that they had been "satisfied" and 22.8% said that they were "very satisfied" with their meals. For lunch, most of the respondents also gave favorable ratings, 61.8% were "satisfied" and 29.1% were "very satisfied" (n=251). The overall number of people who said they were "satisfied" or "very satisfied" with their most recent experiences for dinner was slightly lower than for breakfast or lunch but the dinner meal got the highest percentage of "very satisfied" ratings. Approximately 37% circled "very satisfied" but only 51.1% rated their experience as satisfactory (n=262).

In response to the five statements about restaurant features and policies, the respondents indicated that they were generally in agreement with most of the statements (Table 27). About ninety five percent agreed or strongly agreed that "restaurants should provide seating with easy access for older adults," (n=283). Many agreed (73.8%) with the statement "personal attention from waiters and waitresses is more important than the price of the food," (n=282). In response to the following comment, "restaurants should offer a wide range of food for people on special diets," 73.8 % of the group stated that they were in agreement (n=279). The respondents appear to be divided over the statement "price is more important than personal attention from waiters and waitresses." Although fifty percent indicated that they somewhat disagreed or disagreed with the statement, 49.5% said that they somewhat agreed or fully agreed with the statement (n=281). With regard to the following statement "on their menus restaurants should identify the items which are low in calories, fat, sodium and cholesterol," 70% of the group indicated that they were in agreement (n=283).

TABLE 23. IMPORTANCE OF RESTAURANT FEATURES IN THE RESTAURANT SELECTION PROCESS

RESTAURANT FEATURES	No Response		Not Important		Somewhat Important		Important		Very Important	
	No.	%	No.	%	No.	%	No.	%	No.	%
Distance/restaurant location	24	7.9	58	19.1	103	34.0	65	21.5	53	17.5
Bright lights in parking lot	32	10.6	40	13.2	75	24.8	65	21.5	90	29.7
Parking near the restaurant	35	11.6	18	5.9	38	12.5	95	31.4	117	38.6
Handicapped ramps	54	17.8	153	50.5	22	7.3	26	8.6	48	15.8
Non-smoking section	32	10.6	72	23.8	49	16.2	49	16.2	101	33.3
Comfortable room temp.	34	11.2	9	3.3	44	16.4	121	45.0	95	35.3
Music and noise level	35	11.6	14	4.6	37	12.2	87	28.7	130	42.9
Atmosphere and decor	31	10.2	16	5.3	73	24.1	117	38.6	66	21.8
Cleanliness/sanitation	25	8.3	3	1.0	3	1.0	49	16.2	223	73.6
Prompt courteous service	25	8.3	3	1.0	12	4.0	123	40.6	140	46.2
Large variety of menu items	31	10.2	9	3.0	55	18.2	146	48.2	62	20.5
Menu items for special diets	33	10.9	86	28.4	68	22.4	57	18.8	59	19.5
Price of menu items	29	9.6	14	4.6	71	23.4	108	35.6	81	26.7
Senior citizens' discounts	26	8.6	49	16.2	74	24.4	72	23.8	82	27.1
Choice in size of portions	33	10.9	51	16.8	88	29.0	89	29.4	42	13.9

TABLE 24. IMPACT OF HEALTH CONCERNS ON THE RESTAURANT SELECTION PROCESS

Impact of Respondent's Health Concerns	Number	Percent
No response	19	6.3
Yes	113	37.3
No	171	56.4
Total	**303**	**100**

TABLE 25. IMPACT OF COMPANION'S HEALTH CONCERNS ON THE RESTAURANT SELECTION PROCESS

Impact of Health Concerns of Accompanying Individuals	Number	Percent
No response	19	6.3
Yes	61	20.1
No	223	73.6
Total	**303**	**100**

TABLE 26. RESPONDENTS' PERCEIVED LEVEL OF SATISFACTION WITH RECENT DINING EXPERIENCES

LEVEL OF SATISFACTION	BREAKFAST		LUNCH		DINNER	
	Number	%	Number	%	Number	%
Not Satisfied	2	0.8	2	0.7	4	1.5
Somewhat Satisfied	13	5.2	21	7.8	26	9.5
Satisfied	114	45.2	155	57.6	134	48.7
Very Satisfied	38	15.1	73	27.1	98	35.6
N.A or No Response	136	33.7	52	6.7	41	4.7
Total	**303**	**100.0**	**303**	**100.0**	**303**	**100.0**

TABLE 27. RESPONDENTS' EVALUATION OF STATEMENTS ABOUT SPECIFIC RESTAURANT FEATURES

STATEMENTS	No Response		Disagree		Somewhat Disagree		Somewhat Agree		Agree	
	No.	%	No.	%	No.	%	No.	%	No.	%
Restaurants should have seating with easy access for older adults	20	6.6	7	2.3	7	2.3	92	32.5	177	58.4
Personal attention from staff is more important than price of food	21	6.9	24	7.9	50	16.5	156	51.5	52	17.2
Restaurants should offer items appropriate for people on special diets	24	7.9	18	5.9	55	18.2	139	45.9	67	22.1
Price of the food is more important than personal attention from staff	22	7.3	44	14.5	98	32.3	94	31.0	45	14.9
Restaurants should identify menu items which are low in Calories, fat, sodium & cholesterol	20	6.6	41	13.5	44	14.5	76	25.1	122	40.3

DINING HABITS

Information about the frequency with which the respondents ordered particular types of entrees is summarized in Table 28. When questioned about how often they ordered beef, 63.5% of respondents indicated "sometimes," (n=263). Fifty four percent ordered poultry often (n=271) or always and 42.4% said that they ordered it "sometimes". Fish was popular with 64.5% of the respondents who said that they order it often or always (n=276). Pork was not as popular as the beef, poultry and fish. While 35% said they never ordered it, 55.4% said they ordered pork "sometimes." There were also a large number of people who did not respond (20.8%) to the question about pork (Table 28). Vegetarian dishes were also not as well received as the other items. Forty seven percent of the group never ordered them (n=253) but 34.8% indicated that they "sometimes" ordered vegetarian dishes.

Table 29 contains the data regarding the respondents' preferred methods of preparation for different types of entrees. Although grilling was popular with 31.6% of the group, broiling was the most popular method of preparation for beef entrees (n=259). Forty five percent of the respondents ordered their poultry baked (n=258). More than half (54.5%) preferred their seafood to be broiled (n=255). Baking was the most popular method for preferred for pork entrees as indicated by 50.3% of the respondents (n=193).

While only 16.3% of the respondents purchased desserts often or always, more than sixty percent of the group "sometimes" purchased desserts (n=283). Pie was the most popular choice for dessert as indicated by 49.8% of the respondents (n=219). Ice cream was also popular with 21.9% of the group (Table 30).

TABLE 28. FREQUENCY OF ENTREE ITEMS ORDERED

FREQUENCY	Beef		Poultry		Pork		Seafood		Vegetarian	
	No.	%	No.	%	No.	%	No.	%	No.	%
No Response	40	13.2	32	10.6	63	20.8	27	8.9	50	16.5
Never	15	5.0	9	3.0	84	27.7	16	5.3	120	39.6
Sometimes	167	55.1	115	38.0	133	43.9	82	27.1	88	29.0
Often	78	25.7	141	46.5	22	7.3	168	55.4	29	9.6
Always	3	1.0	6	2.0	1	0.3	10	3.3	16	5.3
Total	**303**	**100**	**303**	**100**	**303**	**100**	**303**	**100**	**303**	**100**

TABLE 29. PREFERRED METHOD OF PREPARATION FOR ENTREES

METHOD OF PREPARATION	Beef		Poultry		Pork		Seafood	
	No.	%	No.	%	No.	%	No.	%
No Response	47	15.5	32	10.6	107	35.3	41	13.5
Fried	7	2.3	57	18.8	27	8.9	70	23.1
Baked	40	13.2	116	38.3	97	32.0	27	8.9
Broiled	115	38.0	54	17.8	33	10.9	139	45.9
Grilled	82	27.1	31	10.2	33	10.9	9	3.0
Steamed	5	1.7	0	0.0	3	1.0	10	3.3
More than 1 response	7	2.3	13	4.3	3	1.0	7	2.3
Total	**303**	**100**	**303**	**100**	**303**	**100**	**303**	**100**

TABLE 30. FREQUENCY OF DESSERT PURCHASES WHEN DINING OUT

FREQUENCY OF PURCHASE	Number	Percent
No Response	20	6.6
Never	58	19.1
Sometimes	179	59.1
Often	39	12.9
Always	7	2.0
Total	**303**	**100**

TABLE 31. DESSERT ITEMS MOST LIKELY TO BE PURCHASED WHEN DINING OUT

TYPE OF DESSERT	Number	Percent
No Response	73	24.1
Cake	11	3.6
Pie	109	36.0
Fruit	12	4.0
Cookies	1	0.3
Ice Cream	48	15.8
Pastry	8	2.6
Pudding/Custard	15	5.0
Frozen Yogurt	15	5.0
More Than One Response	11	3.6
Total	**303**	**100**

RESULTS OF THE CHI-SQUARE TESTS FOR INDEPENDENCE

HYPOTHESIS IA

There are no relationships between the socio-demographic characteristics of older adults (65+ years of age) and their *menu selections* when dining in restaurants.

A series of chi-square tests for independence were used to compare each of the socio-demographic variables with information about the menu selections of the respondents (frequency of entree selections; preferred method of preparation for each type of entree; frequency of dessert purchases and type of dessert most likely to purchase). The significant interactions have been identified on each table and they are summarized in each of the following sections.

Gender. When reviewing the results of the chi-square analyses between the gender of the respondents and their restaurant menu selections, several significant relationships were identified, they are illustrated in Tables 32-34 and listed below:

- Gender Vs. frequency of ordering **beef** entrees;
- Gender Vs. frequency of ordering **poultry** entrees;
- Gender Vs. frequency of ordering **fish/seafood** entrees;
- Gender Vs. frequency of ordering **vegetarian** entrees;
- Gender Vs. preferred method of preparation for **poultry** entrees;
- Gender Vs. preferred method of preparation for **pork** entrees.

Race. As illustrated in Tables 35-37, the chi-square analyses for race versus the menu selections of the respondents revealed the following significant relationships:

- Race Vs. frequency of ordering **beef** entrees;
- Race Vs. frequency of ordering **vegetarian** entrees;
- Race Vs. preferred method of preparation for **poultry** entrees.

Marital Status. Two significant relationships were revealed from the chi-square analyses of the marital status versus the menu selections of the respondents. The results of the tests have been summarized in Tables 38-40 and the significant findings are listed below:

- Marital status Vs. frequency of ordering **poultry** entrees;
- Marital status Vs. frequency of ordering **pork** entrees.

Education. The chi-square test for independence between the respondents' level of education level and their menu selections (Tables 41-43) revealed five significant relationships which are listed below:

- Education Vs. frequency of ordering **pork** entrees;
- Education Vs. preferred method of preparation for **beef** entrees;
- Education Vs. preferred method of preparation for **poultry** entrees;
- Education Vs. preferred method of preparation for **fish/seafood** entrees;
- Education Vs. preferred method of preparation for **pork** entrees.

Employment Status. The chi-square analyses of the employment status of the respondents versus their menu selections are listed in Tables 44-46. No significant relationships were revealed.

Income. Chi-square analyses revealed two significant relationships between income and the menu selections of the respondents. The data are summarized in Tables 47-49. and the significant findings are as follows:

- Income Vs. frequency of ordering **poultry** entrees;
- Income Vs. preferred method of preparation for **pork** entrees.

Conclusion:

Several statistically significant relationships were identified from the chi-square analyses comparing the socio-demographic characteristics of the respondents and their menu selections, therefore the null Hypothesis I a was rejected.

TABLE 32. GENDER VS. FREQUENCY OF ORDERING EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Gender Vs. frequency of ordering **beef** entrees	9.624	2	0.008**	0.188
Gender Vs. frequency of ordering **poultry** entrees	23.328	2	0.000**	0.282
Gender Vs. frequency of ordering **pork** entrees	3.080	2	0.214	0.113
Gender Vs. frequency of ordering **fish/seafood** entrees	5.644	2	0.059**	0.142
Gender Vs. frequency of ordering **vegetarian** entrees	8.274	2	0.016**	0.178

*Statistically significant at .10 level
**Statistically significant at .05 level

TABLE 33. GENDER VS. PREFERRED METHOD OF PREPARATION FOR EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Gender Vs. preferred method of preparation for **beef** entrees	3.398	4	0.494	0.116
Gender Vs. preferred method of preparation for **poultry** entrees	16.922	3	0.001**	0.248
Gender Vs. preferred method of preparation for **fish/seafood** entrees	6.398	4	0.171	0.156
Gender Vs. preferred method of preparation for **pork** entrees	11.323	3	0.023**	0.235

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 34. GENDER VS. FREQUENCY OF DESSERT PURCHASES AND GENDER VS. TYPE OF DESSERT PURCHASED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Gender Vs. frequency of dessert purchases	1.614	2	0.446	0.075
Gender Vs. type of dessert most likely to be purchased	2.897	5	0.716	0.114

* In order to decrease the number of cells having less than 5 responses, the number of categories for question #36 was condensed from eight choices (plus one non-response group) to 6 types of desserts.

TABLE 35. RACE VS. FREQUENCY OF ORDERING EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Race Vs. frequency of ordering **beef** entrees	17.747	4	0.001**	0.251
Race Vs. frequency of ordering **poultry** entrees	1.869	4	0.760	0.083
Race Vs. frequency of ordering **pork** entrees	0.132	2	0.936	0.023
Race Vs. frequency of ordering **fish/seafood** entrees	0.889	4	0.926	0.057
Race Vs. frequency of ordering **vegetarian** entrees	9.288	2	0.010**	0.188

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 36. RACE VS. PREFERRED METHOD OF PREPARATION FOR EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df *	Prob	Contingency Coefficient
Race Vs. preferred method of preparation for **beef** entrees	4.128	8	0.845	0.128
Race Vs. preferred method of preparation for **poultry** entrees	11.032	6	0.087*	0.202
Race Vs. preferred method of preparation for **fish/seafood** entrees	3.436	8	0.904	0.115
Race Vs. preferred method of preparation for **pork** entrees	6.372	8	0.606	0.179

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 37. RACE VS. FREQUENCY OF DESSERT PURCHASES AND RACE VS. TYPE OF DESSERT PURCHASED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Race Vs. frequency of dessert purchases	1.151	4	0.886	0.064
Race Vs. type of dessert most likely to be purchased	9.382	10	0.496	0.203

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having less than 5 responses, the number of categories for question #36 was condensed from eight choices (plus one non-response group) to 6 types of desserts.

TABLE 38. MARITAL STATUS VS. FREQUENCY OF ORDERING EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Marital status Vs. frequency of ordering **beef** entrees	4.705	6	0.582	0.133
Marital status Vs. frequency of ordering **poultry** entrees	16.595	6	0.011*	0.240
Marital status Vs. frequency of ordering **pork** entrees	12.284	6	0.056**	0.221
Marital status Vs. frequency of ordering **fish/seafood** entrees	8.657	6	0.194	0.174
Marital status Vs. frequency of **vegetarian** entrees	5.746	6	0.452	0.149

*Statistically significant at .10 level
**Statistically significant at .05 level

TABLE 39. MARITAL STATUS VS. PREFERRED METHOD OF PREPARATION FOR EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Marital status Vs. preferred method of preparation for **beef** entrees	12.824	12	0.382	0.221
Marital status Vs. preferred method of preparation for **poultry** entrees	13.332	9	0.148	0.222
Marital status Vs. preferred method of preparation for **fish/seafood**	10.468	12	0.575	0.199
Marital status Vs. preferred method of preparation for **pork** entrees	13.554	12	0.330	0.256

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 40. MARITAL STATUS VS. FREQUENCY OF DESSERT PURCHASES AND MARITAL STATUS VS. TYPE OF DESSERT PURCHASED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Marital status Vs. frequency of dessert purchases	5.297	6	0.506	0.136
Marital Status Vs. type of dessert most likely to be purchased	15.174	15	0.439	0.255

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having less than 5 responses, the number of categories for question #36 was condensed from eight choices (plus one non-response group) to 6 types of desserts.

TABLE 41. EDUCATION VS. FREQUENCY OF ORDERING EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Education Vs. frequency of ordering **beef** entrees	8.944	10	0.537	0.182
Education Vs. frequency of ordering **poultry** entrees	9.340	10	0.500	0.183
Education Vs. frequency of ordering **pork** entrees	17.778	10	0.059*	0.263
Education Vs. frequency of ordering **fish/seafood** entrees	10.483	10	0.399	0.192
Education Vs. frequency of ordering **vegetarian** entrees	7.292	10	0.698	0.168

*Statistically significant at .10 level
**Statistically significant at .05 level

TABLE 42. EDUCATION VS. PREFERRED METHOD OF PREPARATION FOR EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Education Vs. preferred method of preparation for **beef** entrees	29.221	20	0.083*	0.325
Education Vs. preferred method of preparation for **poultry** entrees	32.755	15	0.005**	0.337
Education Vs. preferred method of preparation for **fish/seafood** entrees	41.728	20	0.003**	0.376
Education Vs. preferred method of preparation for **pork** entrees	32.900	20	0.035**	0.382

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 43. EDUCATION VS. FREQUENCY OF DESSERT PURCHASES AND EDUCATION VS. TYPE OF DESSERT PURCHASED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Education Vs. frequency of dessert purchases	6.037	10	0.812	0.145
Education Vs. type of dessert most likely to be purchased	24.643	25	0.482	0.319

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having less than 5 responses, the number of categories for question #36 was condensed from eight choices (plus one non-response group) to 6 types of desserts.

TABLE 44. EMPLOYMENT STATUS VS. FREQUENCY OF ORDERING EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Employment status Vs. frequency of ordering **beef** entrees	1.794	6	0.938	0.082
Employment status Vs. frequency of ordering **poultry** entrees	6.363	6	0.384	0.152
Employment status Vs. frequency of ordering **pork** entrees	2.856	6	0.827	0.108
Employment status Vs. frequency of ordering **fish/seafood** entrees	3.127	6	0.793	0.106
Employment status Vs. frequency of ordering **vegetarian** entrees	3.096	6	0.797	0.110

TABLE 45. EMPLOYMENT STATUS VS. PREFERRED METHOD OF PREPARATION FOR EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Employment status Vs. preferred method of preparation for **beef** entrees	12.151	12	0.434	0.216
Employment status Vs. preferred method of preparation for **poultry** entrees	8.942	9	0.443	0.183
Employment status Vs. preferred method of preparation for **fish/seafood**	7.351	12	0.834	0.168
Employment status Vs. preferred method of preparation for **pork** entrees	11.815	12	0.461	0.240

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 46. EMPLOYMENT STATUS VS. FREQUENCY OF DESSERT PURCHASES AND EMPLOYMENT STATUS VS. TYPE OF DESSERT PURCHASED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Employment status Vs. frequency of dessert purchases	1.348	6	0.969	0.069
Employment status Vs. type of dessert most likely to be purchased	21.897	15	0.111	0.302

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having less than 5 responses, the number of categories for question #36 was condensed from eight choices (plus one non-response group) to 6 types of desserts.

TABLE 47. INCOME VS. FREQUENCY OF ORDERING EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Income Vs. frequency of ordering **beef** entrees	6.816	8	0.557	0.168
Income Vs. frequency of ordering **poultry** entrees	19.779	8	0.011**	0.275
Income Vs. frequency of ordering **pork** entrees	3.871	8	0.869	0.132
Income Vs. frequency of ordering **fish/seafood** entrees	9.750	8	0.283	0.195
Income Vs. frequency of ordering **vegetarian** entrees	12.209	8	0.142	0.226

*Statistically significant at .10 level
**Statistically significant at .05 level

TABLE 48. INCOME VS. PREFERRED METHOD OF PREPARATION FOR EACH TYPE OF ENTREE

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Income Vs. preferred method of preparation for **beef** entrees	16.264	16	0.435	0.260
Income Vs. preferred method of preparation for **poultry** entrees	17.137	12	0.145	0.261
Income Vs. preferred method of preparation for **fish/seafood** entrees	19.700	16	0.234	0.284
Income Vs. preferred method of preparation for **pork** entrees	24.384	16	0.081*	0.345

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 49. INCOME VS. FREQUENCY OF DESSERT PURCHASES AND INCOME VS. TYPE OF DESSERT PURCHASED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Income Vs. frequency of dessert purchases	9.876	8	0.274	0.194
Income Vs. type of dessert most likely to be purchased	13.819	20	0.840	0.258

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having less than 5 responses, the number of categories for question #36 was condensed from eight choices (plus one non-response group) to 6 types of desserts.

HYPOTHESIS I B

There are no relationships between the socio-demographic characteristics of older adults (65+ years of age) and their *consumption patterns* when dining in restaurants.

In order to test the aforementioned hypothesis, each of the independent socio-demographic variables were compared with information about the respondents' restaurant consumption patterns (frequency of restaurant dining per meal period; dollar value of restaurant purchases; type of restaurant selected per meal period; and most frequent dining companion). The statistically significant findings for each of the chi-square analyses are presented under the appropriate headings below.

Gender. As listed below, three significant interactions were revealed from the chi-square tests which compared the gender of the respondents with their restaurant consumption patterns (Table 50).

- Gender Vs. frequency of dining out for **dinner;**
- Gender Vs. how much did you spend for **dinner;**
- Gender Vs. with whom did you dine out most often.

Race. The results of the chi-square tests comparing the race of the respondents with their consumption patterns are depicted in Table 51. One statistically significant relationship was identified and it is listed below:

- Race Vs. with whom did you dine out most often.

Marital Status. Table 52 summarizes the chi-square analyses for the marital status of the respondents versus their consumption patterns. One statistically significant relationship was revealed.

- Marital status Vs. with whom did you eat out most often.

Education. The results of the chi-square tests between the respondents' level of education and their consumption patterns have been summarized in Table 53. There were five statistically relationships:

- Education Vs. how often did you eat out for **lunch;**
- Education Vs. how often did you eat out for **dinner;**

- Education Vs. how much did you spend for **dinner;**
- Education Vs. which type of restaurant did you patronize for **breakfast;**
- Education Vs. the main reason why you go out to eat in restaurants.

Employment Status. One statistically significant interaction was revealed from the chi-square analyses which compared the employment status of the respondents with their consumption patterns (Table 54).

- Employment status Vs. with whom did you eat out most often.

Income. The chi-square analyses of the respondents' income levels versus their restaurant consumption patterns revealed four statistically significant relationships. The results of the tests are depicted in Table 55 and statistically significant relationships are as follows:

- Income Vs. frequency of dining out for **dinner;**
- Income Vs. how much did you spend for **breakfast;**
- Income Vs. type of restaurant patronized for **lunch;**
- Income Vs. with whom did you eat out most often.

Conclusion:

From the chi-square tests for independence between the socio-demographic characteristics of the respondents and their consumption patterns, several statistically significant relationships were identified. The null Hypothesis I b was rejected based upon the aforementioned findings.

TABLE 50. GENDER VS. CONSUMPTION PATTERNS

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Gender Vs. frequency of dining out for **breakfast**	3.077	2	0.215	0.104
Gender Vs. frequency of dining out for **lunch**	1.165	2	0.558	0.063
Gender Vs. frequency of dining out for **dinner**	10.632	2	0.005**	0.187
Gender Vs. how much did you spend for **breakfast**	1.225	2	0.542	0.086
Gender Vs. how much did you spend for **lunch**	1.908	2	0.385	0.086
Gender Vs. how much did you spend for **dinner**	6.309	3	0.098*	0.153
Gender Vs. type of restaurant patronized for **breakfast**	2.193	3	0.533	0.114
Gender Vs. type of restaurant patronized for **lunch**	4.544	3	0.208	0.135
Gender Vs. type of restaurant patronized for **dinner**	2.723	3	0.436	0.103
Gender Vs. with whom did you dine out most often	117.299	3	0.000**	0.540
Gender Vs. the main reason why you go out to eat in restaurants	4.544	4	0.337	0.125

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 51. RACE VS. CONSUMPTION PATTERNS

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Race Vs. frequency of dining out for **breakfast**	4.491	4	0.344	0.126
Race Vs. frequency of dining out for **lunch**	1.618	4	0.806	0.074
Race Vs. frequency of dining out for **dinner**	2.926	4	0.570	0.099
Race Vs. how much did you spend for **breakfast**	4.234	4	4.234	0.375
Race Vs. how much did you spend for **lunch**	4.424	4	0.352	0.130
Race Vs. how much did you spend for **dinner**	4.330	4	0.632	0.127
Race Vs. type of restaurant patronized for **breakfast**	6.662	6	0.353	0.196
Race Vs. type of restaurant patronized for **lunch**	3.078	6	0.799	0.111
Race Vs. type of restaurant patronized for **dinner**	2.552	6	0.863	0.099
Race Vs. with whom did you dine out most often	13.094	6	0.042**	0.210
Race Vs. the main reason why you go out to eat in restaurants	8.918	8	0.349	0.174

*Statistically significant at .10 level
**Statistically significant at .05 level

TABLE 52. MARITAL STATUS VS. CONSUMPTION PATTERNS

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Marital status Vs. frequency of dining out for **breakfast**	7.650	6	0.265	0.163
Marital status Vs. frequency of dining out for **lunch**	6.436	6	0.376	0.147
Marital status Vs. frequency of dining out for **dinner**	4.554	6	0.602	0.124
Marital status Vs. how much did you spend for **breakfast**	6.561	6	0.363	0.195
Marital status Vs. how much did you spend for **lunch**	3.294	6	0.771	0.112
Marital status Vs. how much did you spend for **dinner**	11.676	6	0.232	0.206
Marital status Vs. type of restaurant patronized for **breakfast**	10.858	9	0.286	0.247
Marital status Vs. type of restaurant patronized for **lunch**	7.946	9	0.540	0.177
Marital status Vs. type of restaurant patronized for **dinner**	8.750	9	0.461	0.182
Marital status Vs. with whom did you eat out most often	239.912	9	0.000**	0.676
Marital status Vs. the main reason why you go out to eat in restaurants	8.758	12	0.723	0.172

*Statistically significant at .10 level
**Statistically significant at .05 level

TABLE 53. EDUCATION VS. CONSUMPTION PATTERNS

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Education Vs. how often did you eat out for **breakfast**	11.206	10	0.342	0.197
Education Vs. how often did you eat out for **lunch**	17.549	10	0.063*	0.238
Education Vs. how often did you eat out for **dinner**	29.560	10	0.001**	0.304
Education Vs. how much did you spend for **breakfast**	12.212	10	0.271	0.263
Education Vs. how much did you spend for **lunch**	8.337	10	0.596	0.177
Education Vs. how much did you spend for **dinner**	40.748	15	0.000**	0.367
Education Vs. which type of restaurant did you patronize for **breakfast**	22.342	15	0.099*	0.345
Education Vs. which type of restaurant did you patronize for **lunch**	18.862	15	0.220	0.268
Education Vs. which type of restaurant did you patronize for **dinner**	21.708	15	0.116	0.281
Education Vs. with whom you did you eat out most often	15.273	15	0.432	0.226
Education Vs. the main reason why you go out to eat in restaurants	29.873	20	0.072*	0.308

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

TABLE 54. EMPLOYMENT STATUS VS. CONSUMPTION PATTERNS

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Employment status Vs. frequency of dining out for **breakfast**	8.245	6	0.221	0.170
Employment status Vs. frequency of dining out for **lunch**	4.186	6	0.651	0.119
Employment status Vs. frequency of dining out for **dinner**	9.305	6	0.157	0.176
Employment status Vs. how much did you spend for **breakfast**	5.997	6	0.423	0.187
Employment status Vs. how much did you spend for **lunch**	4.843	6	0.564	0.136
Employment status Vs. how much did you spend for **dinner**	3.471	6	0.943	0.114
Employment status Vs. type of rest. patronized for **breakfast**	5.577	9	0.781	0.180
Employment status Vs. type of rest. patronized for **lunch**	6.879	9	0.650	0.165
Employment status Vs. type of rest. patronized for **dinner**	6.367	9	0.703	0.156
Employment status Vs. with whom did you eat out most often	18.790	9	0.027*	0.249
Employment status Vs. the main reason why you go out to eat	12.736	9	0.175	0.315

*Statistically significant at .10 level
**Statistically significant at .05 level

TABLE 55. INCOME VS. CONSUMPTION PATTERNS

CROSSTABULATION	X^2	df*	Prob	Contingency Coefficient
Income Vs. frequency of dining out for **breakfast**	5.281	8	0.727	0.144
Income Vs. frequency of dining out for **lunch**	5.754	8	0.675	0.146
Income Vs. frequency of dining out for **dinner**	19.588	8	0.012**	0.265
Income Vs. how much did you spend for **breakfast**	16.341	8	0.038**	0.313
Income Vs. how much did you spend for **lunch**	13.188	8	0.106	0.232
Income Vs. how much did you spend for **dinner**	17.205	12	0.142	0.261
Income Vs. type of restaurant patronized for **breakfast**	13.707	12	0.320	0.288
Income Vs. type of restaurant patronized for **lunch**	22.861	12	0.029**	0.307
Income Vs. type of restaurant patronized for **dinner**	15.661	12	0.207	0.252
Income Vs. with whom did you eat out most often	36.153	12	0.000**	0.353
Income Vs. the main reason why you go out to eat in restaurants	12.494	12	0.407	0.327

*Statistically significant at .10 level
**Statistically significant at .05 level

* The degrees of freedom (df) are not equal because there were no responses in some of the categories.

HYPOTHESIS II A

There are no relationships between the health concerns/special diets and menu selections of older adults when dining in restaurants as measured by *type of entree selection.*

In order to address the aforementioned hypothesis, a series of chi-square tests for independence were used to compare the respondents' answers to questions #37 (their special diets) and #23 (the effect of their health concerns) with information about the types of entrees they selected when dining out. The results of the analyses are summarized in Tables 56 and 57. Six statistically significant interactions were identified and are listed below:

- Are you on a special diet Vs. frequency of ordering **beef** as your main entree;
- Are you on a special diet Vs. frequency of ordering **pork** as your main entree;
- Are you on a special diet Vs. frequency of ordering **vegetarian** dishes as your main entree;
- Do your health concerns influence your choice of restaurants Vs. frequency of ordering **beef** your main entree;
- Do your health concerns influence your choice of restaurants Vs. frequency of as ordering **pork** as ordering your main entree;
- Do your health concerns influence your choice of restaurants Vs. frequency of **vegetarian** dishes as your main entree.

Conclusion:

Considering the results of the aforementioned chi-square analyses, the null Hypothesis II a was rejected.

TABLE 56. SPECIAL DIETS VS. TYPE OF ENTREE SELECTED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Are you on a special diet Vs. frequency of ordering **beef** as your main entree	4.601	2	0.100*	0.133
Are you on a special diet Vs. frequency of ordering **poultry** as your main entree	4.293	2	0.117	0.127
Are you on a special diet Vs. frequency of ordering **pork** as your main entree	5.494	2	0.064*	0.151
Are you on a special diet Vs. frequency of ordering **seafood** as your main entree	3.255	2	0.196	0.110
Are you on a special diet Vs. frequency of ordering **vegetarian** dishes as your main entree	4.692	2	0.096*	0.137

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #31 were collapsed from five (originally 4 choices plus 1 non-response group) into three categories (never, sometimes, and often/always).

TABLE 57. HEALTH CONCERNS VS. TYPE OF ENTREE SELECTED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Do your health concerns influence your choice of restaurants Vs. frequency of ordering **beef** as your main entree	9.243	2	0.010**	0.185
Do your health concerns influence your choice of restaurants Vs. frequency of ordering **poultry** as your main entree	1.652	2	0.438	0.079
Do your health concerns influence your choice of restaurants Vs. frequency of ordering **pork** as your main entree	4.535	2	0.104**	0.137
Do your health concerns influence your choice of restaurants Vs. frequency of ordering **seafood** as your main entree	0.348	2	0.840	0.036
Do your health concerns influence your choice of restaurants Vs. freq. of ordering **vegetarian** dishes as your main entree	19.734	2	0.000**	0.270

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #31 were collapsed from five (originally 4 choices plus 1 non-response group) into three categories (never, sometimes, and often/always).

HYPOTHESIS II B

> There are no relationships between the health concerns (special diets) and *menu selections* of older adults as measured by *preparation method* for entree selections.

As was the case with Hypothesis II a, information about the respondents' health concerns and special diets (their responses to questions #23 and #37) was compared with information about the methods of preparation they preferred for each type of entree selection. The results of the chi-square tests for independence have been summarized in Tables 58 and 59. One statistically significant interaction was revealed:

- Are you on a special diet Vs. preferred method of preparation for **poultry** as your main entree

Conclusion:

Considering the exploratory nature of this research, all significant findings were viewed as important. Although only one statistically significant interaction was identified from the aforementioned chi-square analyses, the decision was made to reject the null hypothesis II b.

TABLE 58. SPECIAL DIET VS. PREFERRED METHOD OF PREPARATION*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Are you on a special diet Vs. preferred method of preparation for **beef** as your main entree	6.367	4	0.173	0.160
Are you on a special diet Vs. preferred method of preparation for **poultry** as your main entree	12.602	4	0.006**	0.219
Are you on a special diet Vs. preferred method of preparation for **seafood** as your main entree	5.071	4	0.280	0.142
Are you on a special diet Vs. preferred method of preparation for **pork** as your main entree	1.714	4	0.788	0.095

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #32 were collapsed from seven (originally 5 choices plus 2 non-response groups) into five categories (fried, baked, broiled, grilled, and steamed).

TABLE 59. HEALTH CONCERNS VS. PREFERRED PREPARATION METHOD*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Do your health concerns influence your choice of restaurants Vs. preferred method of preparation for **beef** as your main entree	0.456	4	0.978	0.043
Do your health concerns influence your choice of restaurants Vs. preferred method of preparation for **poultry** as your main entree	0.733	4	0.865	0.054
Do your health concerns influence your choice of restaurants Vs. preferred method of preparation for **seafood** as your main entree	4.677	4	0.322	0.135
Do your health concerns influence your choice of restaurants Vs. preferred method of preparation for **pork** as your main entree	0.941	4	0.919	0.070

*Statistically significant at .10 level
**Statistically significant at .05 level

HYPOTHESIS II C

There are no relationships between the health concerns (special diets) and menu selections of older adults when dining in restaurants as measured by *frequency of dessert consumption.*

This hypothesis was tested by comparing information about the frequency of the respondents' dessert purchases when dining out with their responses to questions about their health concerns and special diets (#23 and #37). As illustrated in Table 60, no statistically significant interactions were revealed from the chi-square analyses.

Conclusion:

Given that no statistically significant interactions were identified from the aforementioned chi-square tests of independence, the null Hypothesis II c could not be rejected.

TABLE 60. SPECIAL DIET VS. FREQUENCY OF DESSERT CONSUMPTION AND HEALTH CONCERNS VS. FREQUENCY OF DESSERT CONSUMPTION*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Are you on a special diet Vs. frequency of dessert consumption.	0.200	2	0.905	0.027
Do your health concerns influence your choice of restaurants Vs. frequency of dessert consumption.	3.179	2	0.204	0.106

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #33 were collapsed from four (originally 4 choices plus 1 non-response group) into three categories (never, sometimes and often/ always).

HYPOTHESIS II D

There are no relationships between the health concerns (special diets) and menu selections of older adults when dining in restaurants as measured by *type of dessert selection.*

In order to test the aforementioned hypothesis, chi-square tests of independence were used to determine if there were significant relationships between the types of desserts that the respondents ordered when dining out and their health concerns and/or special diets (their responses to questions #23 and #37). Two significant interactions were revealed from this analyses, they are listed below:

- Are you on a special diet Vs. type of dessert selection.
- Do your health concerns influence your choice of restaurants Vs. type of dessert selection.

Conclusion:

Based upon the statistically significant interactions identified by the aforementioned chi-square analysis, the null hypothesis II d was rejected.

TABLE 61. SPECIAL DIET VS. TYPE OF DESSERT PURCHASED AND HEALTH CONCERNS VS. TYPE OF DESSERT PURCHASED*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Are you on a special diet Vs. type of dessert selection.	40.381	18	0.002**	0.343
Do your health concerns influence your choice of restaurants Vs. type of dessert selection.	40.381	18	0.002**	0.343

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #33 were collapsed from ten (originally 8 choices plus 2 non-response groups) into six categories (sweets, pie, fruit, ice cream, pudding, and frozen yogurt).

HYPOTHESIS III A

> There are no relationships between the health concerns (special diets) and consumption patterns of older adults as measured by *frequency of restaurant patronage per meal period.*

Tables 62 and 63 contain the results of the chi-square analyses used to test this hypothesis. Information about the respondents' health concerns and special diets (question #23 and #37) was compared with information about the frequency of their restaurant patronage per meal period. No statistically significant interactions were revealed.

Conclusion:

The null Hypothesis III a, could not be rejected because there were no statistically significant interactions between the health concerns and/or special diets of the respondents and the frequency with which they patronized restaurants.

TABLE 62. SPECIAL DIET VS. FREQUENCY OF RESTAURANT PATRONAGE PER MEAL PERIOD*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Are you on a special diet Vs. frequency of **breakfast** patronage	3.180	2	0.204	0.108
Are you on a special diet Vs. frequency of **lunch** patronage	4.382	2	0.112	0.123
Are you on a special diet Vs. frequency of **dinner** patronage	2.785	2	0.249	0.099

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #1 were collapsed from seven (originally 5 choices plus 2 non-response groups) into three categories (one or more times per week, 1-3 times per month, and occasionally or never).

TABLE 63. HEALTH CONCERNS VS. FREQUENCY OF RESTAURANT PATRONAGE PER MEAL PERIOD*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Do you health concerns influence your choice of restaurants Vs. freq. of **breakfast** patronage	2.724	2	0.256	0.101
Do you health concerns influence your choice of restaurants Vs. freq. of **lunch** patronage	1.624	2	0.444	0.076
Do you health concerns influence your choice of restaurants Vs. freq. of **dinner** patronage	0.288	2	0.866	0.032

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #1 were collapsed from seven (originally 5 choices plus 2 non-response groups) into three categories (one or more times per week, 1-3 times per month, and occasionally or never).

HYPOTHESIS III B

> There are no relationships between the health concerns (special diets) and consumption patterns of older adults as measured by *type of restaurant selected per meal period.*

The aforementioned hypothesis was addressed by comparing information about the health concerns and special diets of the respondents with information about the types of restaurants they selected when dining out. With reference to Table 64, no significant interactions were revealed from this analysis.

Conclusion:

Due to the fact that the chi-square analysis failed to reveal any statistically significant interactions, the null hypothesis III b could not be rejected.

TABLE 64. SPECIAL DIET VS. TYPE OF RESTAURANT SELECTED PER MEAL PERIOD*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Are you on special diet Vs. type of restaurant selected for **breakfast**	4.172	3	0.243	0.158
Are you on special diet Vs. type of restaurant selected for **lunch**	0.571	3	0.903	0.049
Are you on special diet Vs. type of restaurant selected for **dinner**	1.577	3	0.665	0.079

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #3 were collapsed from seven (originally 5 choices plus 2 non-response groups) into four categories (fast food, cafeteria, family type, or full service).

TABLE 65. HEALTH CONCERNS VS. TYPE OF RESTAURANT SELECTED PER MEAL PERIOD*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Do your health concerns influence your choice of restaurants Vs. type restaurant selected for **breakfast**	0.733	3	0.865	0.066
Do your health concerns influence your choice of restaurants Vs. restaurant type selected for **lunch**	2.336	3	0.506	0.098
Do your health concerns influence your choice of restaurants Vs. restaurant selected for **dinner**	9.163	3	0.027	0.187

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #3 were collapsed from seven (originally 5 choices plus 2 non-response groups) into four categories (fast food, cafeteria, family type, or full service).

HYPOTHESIS III C

> There are no relationships between the health concerns (special diets) and consumption patterns of older adults as measured by *type of dining companion for each meal period.*

In order to test the aforementioned hypothesis, information about the respondents' dining companions was compared with information about their health concerns (question#23) and special diets (question #37). Although 34% of the respondents (n=303) circled two responses for question #4 (dining companions) and another 10.5% circled three responses, none of the chi-square tests revealed significant interactions for the respondents' second or third responses. Therefore, only their first response is reported in the following analyses (Table 66). One statistically significant interaction was revealed, it is listed below:

- Are you on a special diet Vs. with whom did you eat out most frequently within the past month.

Conclusion:

The results of the chi-square analyses indicated that there was a statistically significant relationship between the special diets status of the respondents and their dining companions therefore the null hypothesis III c was rejected. When this study was initiated, it was determined that any statistically significant findings would be considered as sufficient evidence to reject the null hypothesis .

TABLE 66. SPECIAL DIET VS. MOST FREQUENT DINING COMPANION AND HEALTH CONCERNS VS. MOST FREQUENT DINING COMPANION*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Are you on a special diet Vs. with whom did you eat out most frequently within the past month	6.311	3	0.097*	0.150
Do your health concerns influence your choice of restaurant Vs. with whom did you eat out most frequently within the past month	5.753	3	0.124	0.142

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #4 were collapsed from six (originally 5 choices plus 1 non-response group) into four categories (with spouse, with relatives, with friends, or alone).

HYPOTHESIS III D

> There are no relationships between the health concerns (special diets) and consumption patterns of older adults as measured by *dollar value of restaurant purchases per meal period.*

For the Chi-square analysis which was used to address the aforementioned hypothesis, information about the dollar value of the respondents' restaurant purchases was compared with information about their health concerns and special diets (questions#23 and #31). As noted in Table 67, one statistically significant interaction was revealed:

- Do your health concerns influence your choice of restaurants Vs. the dollar value of **dinner** meals.

Conclusion:

As mentioned previously, it was determined that any statistically significant findings would be viewed as evidence to reject the null hypothesis, therefore the null hypothesis III d was rejected.

TABLE 67. SPECIAL DIET VS. DOLLAR VALUE OF RESTAURANT MEAL PURCHASES PER MEAL PERIOD*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Are you on a special diet Vs. dollar value of **breakfast** meals	3.663	2	0.160	0.150
Are you on a special diet Vs. dollar value of **lunch** meals	1.088	2	0.580	0.066
Are you on a special diet Vs. dollar value of **dinner** meals	2.306	2	0.511	0.095

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #2 were collapsed from six (originally 4 choices plus 2 non-response groups) into four categories.
For breakfast: less than $3; between $3-5; more than $6.
For lunch: less than $5; between $5-10; more than $11.
For dinner: less than $5; between $5-10; between $11-20; more than $20.

TABLE 68. HEALTH CONCERNS VS. DOLLAR VALUE OF RESTAURANT MEAL PURCHASES PER MEAL PERIOD*

CROSSTABULATION	X^2	df	Prob	Contingency Coefficient
Do your health concerns influence your choice of restaurants Vs. dollar value of **breakfast** meals	3.937	2	0.140	0.153
Do your health concerns influence your choice of restaurants Vs. dollar value of **lunch** meals	1.583	2	0.453	0.079
Do your health concerns influence your choice of restaurants Vs. dollar value of **dinner** meals	9.625	2	0.022**	0.189

*Statistically significant at .10 level
**Statistically significant at .05 level

* In order to decrease the number of cells having counts of less than 5, the number of categories in the response to question #2 were collapsed from six (originally 4 choices plus 2 non-response groups) into four categories.
For breakfast: less than $3; between $3-5; more than $6.
For lunch: less than $5; between $5-10; more than $11.
For dinner: less than $5; between $5-10; between $11-20; more than $20.

RESULTS OF T-TESTS

HYPOTHESIS IV

> There are no differences in the specific features of restaurants (products and services) that are important to older adults with health concerns (therapeutic diets) and those that are important to older adults who *do not* have health concerns (therapeutic diets).

In order to determine if there were any significant differences in the restaurant features that were important to the respondents with health concerns and/or special diets and those that were important to the group without these concerns, a series of t-tests were performed. The results of the analyses have been summarized in Tables 69 and 70.

The t-tests for question #37 (are you on a special diet of any kind), versus questions #8-22 revealed that there was a statistically significant difference in the ratings for one particular restaurant feature. The availability of menu items which are appropriate for special diets was rated as significantly more important to the group of respondents who indicated that they were on special diets.

When conducting the t-tests for the responses to question #23 (do your health concerns influence your choice of restaurants), there were several restaurant features which were rated significantly differently by the two groups (Table 70). The respondents whose health concerns influenced their choice of dining establishments, rated each of the following features significantly higher in importance than the individuals whose decisions were not affected by their health concerns.

- distance from your home or convenient location;
- bright lighting in the parking lot;
- parking adjacent or convenient to the restaurant;
- access ramps for the handicapped;
- availability of a non-smoking section;
- comfortable room temperature;

- music and noise level;
- atmosphere and decor;
- large variety of menu items;
- menu items which are appropriate for special diets;
- price of menu items;
- seniors citizens' discounts;
- choice in size of portion.

Conclusion:

The results of the t-tests indicated that there were significant differences in the restaurant features which were important to the respondents with health concerns and/or special diets versus those without these concerns, therefore the null hypothesis IV was rejected.

TABLE 69. T-TESTS FOR SPECIAL DIET VS. RESTAURANT FEATURES

Special Diet versus	N	Mean	Std Dev	Std Error	T Value	DF	Prob.
Convenient location							
NO	199	2.337	1.069	0.072	-1.3333	194.5	0.2585
YES	100	2.480	1.394	0.104	-1.1418	297.0	0.2544
Well lit parking lot							
NO	192	2.724	1.069	0.077	-0.7705	192.2	0.4419
YES	99	2.828	1.107	0.111	-0.7791	289.0	0.4365
Convenient parking							
NO	195	3.154	0.895	0.064	-0.3799	179.8	0.7044
YES	96	3.198	0.947	0.096	-0.3874	289.0	0.6988
Ramps for handicapped							
NO	176	1.841	1.208	0.091	-0.594	180.8	0.5532
YES	92	1.935	1.239	0.129	-0.599	266.0	0.5499
Non-smoking section							
NO	194	2.572	1.249	0.089	-1.064	201.3	0.2886
YES	97	2.732	1.186	0.120	-1.046	289.0	0.2966
Comfortable room temp.							
NO	193	3.109	0.812	0.058	-0.035	204.2	0.9719
YES	98	3.112	0.771	0.078	-0.035	289.0	0.9724
Music and noise level							
NO	192	3.250	0.868	0.626	-0.673	204.9	0.5019
YES	97	3.319	0.811	0.082	-0.658	287.0	0.5113
Atmosphere and decor							
NO	193	2.834	0.838	0.060	-0.719	194.7	0.4733
YES	100	2.910	0.866	0.087	-0.726	291.0	0.4683
Cleanliness/sanitation							
NO	198	3.758	0.535	0.038	-0.718	217.6	0.4736
YES	101	3.802	0.490	0.049	-0.698	297.0	0.4858
Prompt courteous service							
NO	199	3.437	0.647	0.046	-0.352	201.2	0.7252
YES	99	3.465	0.628	0.063	-0.348	296.0	0.7278
Variety of menu items							
NO	192	2.917	0.775	0.056	-0.716	224.2	0.4748
YES	101	2.980	0.693	0.069	-0.691	291.0	0.4899
Sp. diet menu items							
NO	190	2.032	1.059	0.077	-6.014	201.9	0.0001**
YES	101	2.822	1.071	0.106	-6.036	289.0	0.0001**
Price of menu items							
NO	195	2.897	0.891	0.064	-0.873	208.9	0.3836
YES	100	2.990	0.847	0.085	-0.859	293.0	0.3911
Seniors' discounts							
NO	195	2.600	1.086	0.078	-0.722	189.9	0.4723
YES	100	2.700	1.150	0.115	-0.734	293.0	0.4637
Choice of portion size							
NO	191	2.439	0.992	0.072	0.574	203.1	0.5666
YES	100	2.370	0.981	0.098	0.572	289.0	0.5678

TABLE 70. T-TESTS FOR HEALTH CONCERNS VS. RESTAURANT FEATURES

Special Diet versus	N	Mean	Std Dev	Std Error	T Value	DF	Prob.
Convenient location							
NO	185	2.245	0.984	0.072	-3.163	245.7	0.0028**
YES	121	2.603	0.094	0.095	-3.055	304.0	0.0025**
Well lit parking lot							
NO	179	2.618	1.062	0.079	-1.620	245.1	0.1065*
YES	119	2.891	1.111	0.102	-1.634	296.0	0.1031*
Convenient parking							
NO	180	3.072	0.909	0.068	-2.124	251.1	0.0346**
YES	117	3.299	0.893	0.083	-2.116	295.0	0.0352**
Ramps for handicapped							
NO	164	1.689	1.122	0.087	-2.821	209.5	0.0052**
YES	110	2.118	1.304	0.124	-2.906	272.0	0.0040**
Non-smoking section							
NO	179	2.39	1.224	0.091	-4.249	259.9	0.0001**
YES	119	2.99	1.175	0.108	-4.214	296.0	0.0001**
Comfortable room temp.							
NO	178	3.034	0.766	0.057	-1.902	233.6	0.0584**
YES	119	3.218	0.855	0.078	-1.944	295	0.0529**
Music and noise level							
NO	179	3.156	0.885	0.066	-2.538	263.1	0.0117*
YES	117	3.410	0.811	0.075	-2.491	294.0	0.0133*
Atmosphere and decor							
NO	182	2.780	0.818	0.061	-1.829	235.6	0.0687*
YES	118	2.966	0.886	0.082	-1.859	298.0	0.0639*
Cleanliness/sanitation							
NO	184	3.772	0.481	0.035	-0.273	233.6	0.7852
YES	123	3.789	0.562	0.051	-0.281	305.0	0.7786
Prompt courteous service							
NO	182	3.426	0.568	0.042	-1.002	215.1	0.3177
YES	121	3.504	0.720	0.065	-1.050	302.0	0.2944
Variety of menu items							
NO	180	2.844	0.723	0.054	-2.882	243.7	0.0043**
YES	120	3.100	0.771	0.070	-2.919	298.0	0.0038**
Sp. diet menu items							
NO	177	1.808	0.934	0.070	-10.894	243.0	0.0001**
YES	118	3.051	0.977	0.090	-10.994	299.0	0.0001**
Price of menu items							
NO	182	2.736	0.858	0.064	-4.954	258.8	0.0001**
YES	119	3.229	0.828	0.076	-4.917	299.0	0.0001**
Seniors' discounts							
NO	184	2.402	1.046	0.077	-4.676	240.8	0.0001**
YES	119	3.000	1.112	0.102	-4.738	301.0	0.0001**
Choice of portion size							
NO	177	2.237	0.965	0.073	-3.875	253.3	0.0001**
YES	119	2.681	0.965	0.088	-3.875	294.0	0.0001**

SUMMARY

In this chapter the results of all the statistical analyses were presented in tabular form along with the appropriate level of significance. The major findings of each test were summarized along with a decision of whether or not to reject each hypothesis. It was determined that there were significant interactions between the socio-demographic characteristics of the survey respondents and their dining patterns. For the most part, the consumption patterns of the respondents did not appear to be affected by their health concerns and/or special diets. On the other hand, health concerns and/or special diets affected the menu selections of some of the respondents. The t-tests revealed that there were significant differences in the restaurant features which were rated as important to the respondents with health concerns and/or special diets. In the next chapter the results of the statistical analysis will be discussed in relation to the hypotheses which were developed at the outset of this research project.

CHAPTER V

DISCUSSION AND CONCLUSIONS

INTRODUCTION

In the first part of this chapter, the socio-demographic characteristics of the individuals who participated in this research study have been compared with a profile of the average American over 65 years of age. This is followed by a discussion of the hypothesis testing which incorporates the results of the statistical analyses described in the previous chapter. The limitations of the research study and directions for future research are explored in the last two sections.

COMPARISON OF THE SURVEY RESPONDENTS WITH THE TOTAL U.S. POPULATION OVER 65 YEARS OF AGE

In order to put the results of this research in perspective it is necessary to compare the demographic characteristics of the sample with those of the total U.S. population over 65 years of age. Unfortunately, detailed data from the 1990 Census are not yet available to the public, therefore the figures for the U.S. population over 65 are based upon information which was made available by the U.S. Census Bureau in 1986.

The majority of the respondents were young-old, 70% were between the ages of 65-74 years with a mean age of 72.2 years. In 1985, approximately 59.4% of the U.S. population over 65 years of age were between 65-74 and the average life expectancy for both males and females of all races was 74.7 years (Aging America, 1988). Ninety five percent of the respondents were white as compared with 90.2% of the population over 65 in 1986. The majority of the respondents were males (59.4%), as opposed to 40% of the population over 65 in 1986 (Aging America, 1988).

Almost sixty five percent of the respondents were married as compared with 55.3% percent of the total U.S. population over 65 in 1986. Within the segment of the U.S. population 65-74 years of age, approximately 64% were married (Aging America 1988). Sixty nine percent of the sample reported that they were living with at least one other person and 76.2% indicated that it was someone over 65 years of age (the questionnaire did not enable the respondents to differentiate between family members and non-family members). According to the U.S Census data, in 1986, 67% of all the non-institutionalized people over 65 years of age lived in a family setting (75.48% of the population between 65-74 years old). Almost ninety three percent of the respondents indicated that they had at least a high school level education. In 1986, aged Americans reported that they had spent an average of 11.8 years in school (Aging America, 1988). While almost 15% of the sample indicated that they were still employed, only 10.5 % of the U.S. population over 65 was still working in 1986. The median income level for the respondents was between $25,001-30,000 annually. In 1986, the average figure for the U.S. population between 65-74 years of age was $20,354 and for the total population over 65, it was $19,117 annually (Aging America, 1988).

Overall, the health status of the sample population was comparable with that of the total U.S. population over 65 in 1986. The majority of respondents (74%) indicated that they were in good health, which is the general trend reported in the literature (Aging America, 1988; Schlenker, 1984). The health conditions reported by the respondents compared closely with those reported by the total U.S. population over 65 years of age (Figure 7). Arthritis was the most commonly cited health problem (29.7% of the sample), followed closely by hypertension (28.1%) and high blood cholesterol levels (27.4%).

Many of the respondents reported that the their health conditions affected their eating habits. Approximately twenty six percent of the sample reported that their concern

over problems with high blood cholesterol affected their eating habits (n=303). Eighteen percent indicated that they had changed their eating habits because they were trying to control hypertension. Another 12.2% were reportedly consuming diets designed to reduce the risk of heart disease (n=303). These figures are similar to the data reported by Smith, et al., (1988).

In response to the question about their diet, 37% of the group said that they were on some kind of special diet (n=303). Low-fat diets were the most commonly cited type of diet consumed (36.8% of the first responses for n=106). This figure is comparable with the estimate of 18-43% for all older adults reported by Schlenker in 1984. When questioned about their weight, most of the respondents (49.5%), considered themselves to be "at about their ideal body weight," but 41% felt that they were "somewhat overweight."

In general, the respondents were a mobile group; less than 18% of the total sample reported any physical limitations with regard to walking (n=303). Of those individuals who said that they had some difficulty getting around, 57% indicated that they "had to walk slowly." The U.S. government data estimates that one out of every four individuals over 65 has some degree of activity limitation (Aging America, 1988). Less than 7% of the respondents indicated that they had difficulty chewing their food. In 1984, Schlenker reported that 50% of all Americans become edentulous by age 65 but the majority of them do not rely upon soft or pureed foods.

With regard to restaurant meals, dinner was the meal most often selected by the respondents who chose to dine out. More than 88% of the sample indicated that they had been out for dinner at least once during the previous month (n=303). At dinner time, full service restaurants were the most popular option, with the largest percentage of the group spending between $5-10 for their portion of the meal. The data from the survey instrument were not organized to provide a figure of average meals per week such as given by the

National Restaurant Association (Conroy, 1986; Regan, 1987). Nevertheless, a review of the figures in Table 16 revealed that 18% of the total sample ate out for breakfast, 38% for lunch and 36% for dinner, at least once per week during the previous 30 day period.

With a few exceptions, the sample appears to be comparable with the rest of the U.S. population over 65. Given the current population trends, the distribution of men and women in the group was not as expected. In addition, the respondents appear to be more highly educated and have higher annual incomes than those reported for the rest of the population over 65.

HYPOTHESIS TESTING

The discussion section which follows is based upon the results of the statistical analyses performed for each hypotheses. In order to facilitate their interpretation, the significant findings have been grouped together under the appropriate headings.

Hypothesis I a

There are no relationships between the socio-demographic characteristics of older adults (65+ years of age) and their *menu selections* when dining in restaurants.

Hypothesis I b

There are no relationships between the socio-demographic characteristics of older adults (65+ years of age) and their *consumption patterns* when dining in restaurants.

Gender. The chi-square analyses for the gender of the respondents versus their *menu selections* revealed that men and women over 65 years of age have different

preferences when dining out. The male respondents ordered beef and fish/seafood entrees more frequently than the females in the group. On the other hand, the women ordered poultry and vegetarian dishes more often than the men.

There were also differences in the preparation methods preferred by each of the sexes. While the male respondents preferred their poultry baked or fried, the females chose baked or broiled poultry entrees. The female respondents preferred to have their pork entrees baked in contrast with the men who did not exhibit a strong preference for a particular method or preparation.

The results of the chi-square test for independence between the gender of the respondents and their *consumption patterns* revealed three significant relationships. A larger percentage of the male respondents (42.9% of 175 versus 28% of 118) went out for dinner at least once per week and spent more for their meals than the female respondents. This pattern appears to be reasonable given the differences in their appetites and/or nutritional needs. Considering that men over 65 years of age usually have more money income than women of the same age group, socioeconomic factors may also have had an effect on the observed relationships (Aging America, 1988). In addition, a higher percentage (82.5% of 171) of the males in the sample reported that their spouse was their most frequent dining companion (as opposed to 26.3% of 114 females). This observation coincides with what one would expect given that most older men remain married until they die. Elderly women on the other hand, are often widowed and live alone (Aging America, 1988).

Race. It is difficult to interpret the differences in the *menu selections* of the respondents which were related to their race because a relatively small percentage of the respondents were black. Nevertheless, the chi-square analyses revealed that there were statistically significant differences in the distribution of the responses for three questions.

When asked about the frequency with which they order beef entrees, a larger percentage of the black respondents indicated that they never order beef entrees. Many of the black respondents seemed to like vegetarian entrees but almost half of the white respondents indicated that they never order them.

Regarding preparation methods, a higher percentage of the blacks preferred their poultry entrees baked as opposed to the whites who did not indicate a strong preference for one type of preparation method over the others. Again, it would be unwise to put much credence in these observations because of the small number of blacks participating in this research.

When comparing the *consumption patterns* of the white respondents with those of the black respondents one significant relationship was revealed. A larger percentage of the whites (61.9% of 270)) versus the blacks (28.6% of 14) indicated that their spouse was their most frequent dining companion. Considering that the average life expectancy for whites is 8.4 years longer than for blacks, this result was not unusual (Aging America, 1988).

Marital Status. The chi-square analyses of the interaction between the marital status of the respondents and their *menu selections* revealed two significant relationships. The married respondents ordered poultry less frequently than the rest of the individuals in the sample (who were either divorced, widowed or never married). In addition, more of the single (never married) people said that they never ordered pork when dining out during the previous 30 days. Although these relationships were statistically significant, they do not fit a pattern and should be considered with caution.

The chi-square test for independence between the marital status of the respondents and their *consumption patterns* revealed one significant relationship. As one might expect, the respondents who were married reported that their spouse was their most frequent dining

companion (92.4% of 184). Sixty percent of the respondents who had never been married (n=15) ate out most often with their friends, the widowed (52.8% of 72) dined with other relatives and the divorcees were equally divided between their friends (42.9%) and their relatives (42.9% of 14).

Educational Level. From the chi-square analyses of education level versus *menu selections*, five significant relationships were identified. However, the number of respondents in the two groups was relatively small and there were some inconsistences in the responses that were given. The respondents with an elementary school education and those with junior high level education had menu selections that were different from the rest of the respondents but not consistently different. Therefore it was difficult to interpret the data and no conclusions were drawn.

Five significant relationships were also noted from the Chi-square analyses of the educational level of the respondents versus their *consumption patterns*.. As was the case with the chi-square test for independence between educational level and *menu selections*, some of the observed relationships appeared to be random in nature. There may not have been enough people in each educational grouping to define the relationships. For example, the largest percentage of respondents in every group except those with lowest level of education (elementary school) and the highest level (graduate school), indicated that they chose fast food restaurants for breakfast. Most of the respondents in both the elementary school group and the graduate school group went to family type restaurants (100% and 48% respectively). For lunch, the largest percentage of the respondents in every educational group except those with a junior high level education, reported that they ate out for lunch between 1-3 times per month. The largest percentage of the junior high school group indicated that they dined out for lunch at least once per week or more.

The statistical analyses revealed that there was a statistically significant relationship between education and the dollar value of restaurant meals purchased. Most of the individuals in the junior high group (71.4% of 7), and senior high group (54.2% of 96), spent between $5-10 on dinner meals. The largest percentage of the respondents in the rest of the groups: elementary school 42.9% of 7; college 53.2% of 79; and graduate school 48.8% of 43; spent between $11-20 for their dinner meals. Thus, the amount of money spent on restaurant meals was not directly proportional to the respondents' of level of education.

Income. When testing the relationship between the respondents' income levels and their *menu selections*, two significant interactions were noted, however, no clear patterns were evident. The respondents with annual income levels between $30,001-$50,000 ordered poultry less frequently than the individuals in the rest of the income groups. While the majority of the respondents at all income levels preferred their pork entrees to be baked, the largest percentage of the individuals who chose pork entrees that were fried, had annual incomes between $10,001-20,000.

The chi-square test for independence between the respondents' income levels and their *consumption patterns* revealed four statistically significant relationships. The largest percentage of the respondents in each income group indicated that they ate dinner out 1-3 times per month with the exception of the respondents whose annual incomes were between $30,001-50,000. Almost fifty percent of that group indicated that they had eaten dinner in a restaurant at least once per week during the previous 30 day period (n=71). Although the relationship between income and frequency of restaurant dining is not directly proportional, the respondents with higher incomes ate out more often than those in the lower income groups.

Although there was a statistically significant relationship between the income level of the respondents and the dollar value of their breakfast meals, a direct relationship between the two did not become apparent. The largest percentage of all the respondents, with the exception of the respondents in two groups (the less than $10,000 group and $20,000-$30,000 group) indicated that they spent between $3-5 for their breakfast meals. Of the respondents in the two groups which were exceptions, most indicated that they spent less than $3 for breakfast.

When analyzing the relationship between the type of restaurant chosen and the respondents' annual income levels one statistically significant interaction was revealed. For their lunch meals, the individuals in each income group chose different types of restaurants. The largest percentage (55.6%) of the respondents with an annual incomes of less than $10,000 chose cafeteria style restaurants for lunch (n=9). Amongst the $10,001-20,000 group, the largest percentage (35.6%), dined in family type restaurants (n=45). Fast food restaurants were popular lunchtime options with the $20,001-30,000 group (35.9% of 53). For both the $30,001-50,000 group and the $50,001+ group, the largest percentage of respondents (36.5% and 36% respectively) chose full service restaurants for lunch.

For all income groups, the respondents indicated that their spouses had been their most frequent dining companions during the previous 30 days.

In summary, the results of the statistical analyses revealed numerous significant interactions between the socio-demographic characteristics of the survey respondents and their dining patterns. Therefore, it was possible to reject both null hypotheses (I a and I b). Due to the size of the sample however and the statistical techniques which were used, these observations may have limitations.

HYPOTHESIS II

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants.

A series of chi-square tests for independence were utilized to determine if there were any statistically significant relationships between the health concerns and/or special diets of the respondents and their menu selections. First, the respondents answers to the question (#37) about their special diets were used to partition the sample into two groups: those individuals who indicated that they were on some type of special diet, and those who were not. Then, the respondents were grouped according to the impact that health concerns had on their restaurant dining patterns (question #23). The individuals who believed that their health concerns influenced their choice of restaurants were compared with the respondents who said that their decisions regarding where to dine were not affected by their health concerns. As mentioned previously, approximately one third of the respondents in this study were on special diets, but 40% of the sample indicated that their health concerns had an impact on their choice of restaurants (n=303). Of those with health concerns, 50.9% were on special diets (n=112) and 63.33% of the respondents on special diets indicated that their health concerns influenced their choice of restaurants (n=90).

Hypothesis II a

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants as measured by the type *of entree selections.*

When comparing the types of entrees selected by individuals on special diets with the responses of individuals who were not on diets, three statistically significant relationships were identified. Among the individuals who indicated that they ordered beef entrees "often or always" the majority (74.1%) were not on special diets (n=77). Moreover, a higher percentage of the special diet group reported that they never ordered beef entrees.

Fifty percent of the respondents on special diets (n=78) indicated that they "sometimes" ordered entrees made with pork but a larger percentage of the diet group versus the non-diet group indicated that they never ordered pork entrees. In general, the respondents in the dieting group consumed pork less frequently than the individuals who were not on diets. On the other hand, the respondents who were on special diets ordered vegetarian entrees more frequently than the non-dieting group. More than half of the non-dieting group indicated that they never ordered vegetarian entrees.

For the second part of the analyses, the respondents were compared according to the impact that their health concerns had on their eating habits. Overall, the results of these analyses were very similar to those obtained from the comparison based upon special diets. More than one third of the individuals who indicated that their health concerns did not impact their restaurant dining habits, often or always ordered beef entrees. The group with health concerns were less likely to order beef entrees. In addition, they ordered pork less frequently then the group whose health concerns did not affect their choice of restaurants. The "health concerned" group also ordered vegetarian entrees more frequently than the individuals in the "unconcerned" group.

Considering the aforementioned relationships, it is clear that special diets and/or health concerns affected the menu selections of some of the survey participants. The respondents whose health concerns influenced their decisions regarding where to dine as

well as those individuals on special diets, tried to avoid the menu entrees which are generally considered to be high in fat. Therefore, the null hypothesis (II a) was rejected.

Hypothesis II b

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants as measured by *preparation method.* for entree selections.

The preparation methods selected by the respondents in the special diet group versus those chosen by the non-diet group were similar with one notable exception. The largest percentage of both groups indicated that they preferred their poultry entrees baked but 27.3% of the individuals not on special diets indicated that they ordered fried poultry items. Less than 11% of the special diet group ordered fried poultry entrees, they were more likely to order poultry items which were broiled or grilled. The distribution of the responses concerning the preferred methods of preparation for beef, fish/seafood and pork entrees were similar for both groups.

An examination of the methods of preparation chosen by the individuals with health concerns versus those who were not concerned, indicated that there were no statistically significant differences. There were some subtle trends however. The individuals who said that their health concerns impacted their choice of restaurants were more inclined to order entrees prepared by methods which result in less fat content. For example, larger percentage of the individuals with health concerns ordered their pork entrees broiled versus those in the unconcerned group who preferred fried pork entrees. This information regarding the preferred methods of preparation indicates that the dining patterns of some

older adults may be affected by their health concerns. Consequently, the null hypothesis II b was rejected.

Hypothesis II c

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants as measured by *frequency of dessert consumption.*

According to the descriptive data, approximately 60% of the respondents sometimes order dessert when dining in restaurants (n=283). However, a comparison of the responses for the individuals on special diets versus those who were not on special diets revealed that there were no significant differences in the frequency of dessert purchases between the two groups. The largest percentage of both groups said they "sometimes" order dessert when dining out. The pattern was the same when comparing the individuals with health concerns to those who were not concerned. Although a larger percentage of the "concerned" group indicated that they never order dessert, there were no significant differences between the groups. As a result, the null hypothesis II c could not be rejected.

Hypothesis II d

There are no relationships between the health concerns (therapeutic diets) and *menu selections* of older adults when dining in restaurants as measured by *type of dessert selections.*

A comparison of the types of desserts ordered by the individuals on special diets versus those ordered by the respondents who were not on diets revealed that there were

significant differences between the two groups. Although pie was the favorite type of dessert for both groups, more of the respondents on special diets ordered low-fat desserts. As opposed to the non-diet group, a large percentage of the dieters ordered fruit or frozen yogurt when dining out. Many of the individuals who were not on special diets were fond of ice cream.

The chi-square analyses for the type of dessert purchased versus the health concerns of the respondents revealed that the dessert preferences for the two groups were statistically different. The respondents with health concerns were more likely to order low-fat items than the unconcerned individuals. Pie was still the favorite for both groups but more of the concerned individuals chose frozen yogurt and fruit desserts. Given the aforementioned observations regarding the dessert purchases of the respondents with special diets and/or health concerns, the null hypothesis II d was rejected.

HYPOTHESIS III

There are no relationships between the health concerns (therapeutic diets) and *consumption patterns* of older adults when dining in restaurants.

In order to determine if their were any statistically significant relationships between the health concerns (special diets) of the respondents and their consumption patterns, a series of chi-square analyses were performed. As was the case with the Hypothesis II, the respondents were divided into two groups: those who said they were on special diets, and those who were not. In addition, the responses of the individuals who believed that their health concerns influenced their choice of restaurants were compared with the responses of the group that said their health concerns did not affect their decisions regarding where to dine.

Hypothesis III a

There are no relationships between the health concerns (therapeutic diets) and *consumption patterns* of older adults as measured by *frequency of restaurant patronage per meal period.*

The Chi-square analyses which were used to address the aforementioned hypothesis failed to reveal any significant differences in the frequency with which individuals with health concerns and/or on special diets patronize restaurants versus the respondents who do not have these restrictions. Therefore, the null hypothesis III a could not be rejected.

Hypothesis III b

There are no relationships between the health concerns (therapeutic diets) and *consumption patterns* of older adults as measured by type *of restaurant selected per meal period.*

According to the chi-square tests for independence which were performed in order to address this hypothesis, there were no significant differences between the types of restaurants that the respondents with special diets and/or health concerns patronized versus the type that the individuals in the rest of the sample chose for each meal occasion. Consequently, hypothesis III b could not be rejected.

Hypothesis III c

There are no relationships between the health concerns (therapeutic diets) and *consumption patterns* of older adults as measured by *type of dining companion.*

A comparison of the responses given by the individuals with special diets versus those without, indicated that the largest percentage of both groups dined with their spouses. However, a larger percentage of the people in the special diet group ate out with their spouses. Moreover, none of the respondents on special diets went out to eat by themselves during the previous thirty days. It is important to note that the significant findings reported from these analyses may have been affected by the size of the sample and the unusual distribution of the responses in the chi-square tests. Furthermore, no significant relationships were revealed from the comparison of the dining companions for the respondents with health concerns versus the companions of the individuals without health concerns. Although the results of the statistical analysis were somewhat questionable in nature, the null hypothesis III c was rejected. Due to the exploratory nature of this study, it was determined that any statistically significant findings would be considered sufficient evidence to reject the null hypothesis.

Hypothesis III d

There are no relationships between the health concerns (therapeutic diets) and consumption *patterns* of older adults as measured by *dollar value of restaurant purchases per meal period.*

The chi-square test for independence for the dollar value of restaurant purchases per meal period versus the special diets of the respondents failed to reveal any significant

differences in the spending habits of the two groups. On the other hand, the chi-square analysis for health concerns versus dollar value of restaurant meals, revealed that their was a significant difference in the amount of money that the respondents with health concerns spent on restaurant meals versus the amount spent by the unconcerned group. The largest percentage of the individuals with health concerns spent between $5-10 for their dinner meals but most of the respondents in the unconcerned group spent $11-20 for dinner. The findings of these analyses indicate that there was a relationship between the health concerns of older adults and the amount of money that they spend for restaurant meals. Consequently, the null hypothesis III d was rejected.

HYPOTHESIS IV

> There are no differences in the specific features of restaurants (products and services) that are important to older adults with health concerns (therapeutic diets) and those that are important to older adults who do not have health conditions (therapeutic diets).

The t-tests which were performed in order to test the aforementioned hypothesis, revealed that there were differences in the restaurant features that were important to the respondents with special diets and/or health concerns versus those that were important to the individuals in the rest of the sample. When comparing the responses of the individuals in the special diet group with the responses of individuals <u>not</u> on special diets, one specific feature was clearly more important to the special diet group. As one might expect, "the availability of menu items appropriate for special diets" was rated as significantly more important to the respondents on special diets.

Further comparisons of the importance ratings for the restaurant features, revealed that the respondents whose health concerns influenced their choice of restaurants rated all of the features, with the exception of two, as significantly higher in importance than the individuals in the "unconcerned" group. The restaurant features, "sanitation and cleanliness" and "prompt courteous service" were equally important to both groups. These relationships prompted the author to reject null hypothesis IV.

SUBSTANTIVE CONCLUSIONS

Based on the results of the statistical analyses, it is apparent that there were relationships between the socio-demographic characteristics of the respondents and their restaurant dining patterns. These relationships were described in detail and listed under the appropriate headings in the first part of this chapter.

When analyzing the *menu selections* of the respondents it became apparent that the individuals with health concerns as well as those on special diets, made an effort to select entrees which were lower in fat than some of the alternatives. Health concerns and/or special diets did not influence the frequency with which individuals in these groups ordered dessert items versus the respondents in the rest of the sample. Nevertheless, the people in the special diet and/or health concerned groups were more likely to select low-fat choices than the respondents in rest of the sample. In some cases, however, the individuals on special diets were not as concerned about what they ate as the individuals who said that their health concerns influenced their decisions regarding where to eat. Several of the relationships which were discovered during process of analyzing the data seem to indicate that the individuals in the "health concerned" group were more particular about their desire for healthy menu items. This is especially puzzling because only 51% of the individuals who indicated that their health concerns affected their choice of restaurants were actually on

special diets. Nevertheless, the chi-square test for independence between the respondents' answers to question #23 and the specific restaurant features listed in Part II of the questionnaire revealed that the "health concerned" group rated the availability of menu items appropriate for special diets as significantly higher in importance than the individuals in the unconcerned group.

The *consumption patterns* of the individuals with special diets and/or health concerns were, for the most part, similar to those described by the rest of the sample. The one notable exception was the fact that the individuals who said that their health concerns influenced their choice of restaurants did not spend as much money on their dinner meals in restaurants as the rest of the group. It is unclear as to why this would be the case, perhaps the items that they purchase are lower in cost. As mentioned previously, they ordered more vegetarian dishes than the rest of the respondents. Meatless dishes are usually much less expensive than the prime cuts of beef and fish/seafood which were popular with the non-diet and/or health conscious respondents. Or it is possible that individuals in the special diet and/or health conscious group do not order as many extras such as side dishes and appetizers.

From the t-tests which were performed, it was discovered that the largest percentages of all of the respondents rated " sanitation and cleanliness" and "prompt courteous service" as highly important features for restaurant facilities. Given this finding, operators who are trying to increase their patronage by individuals over 65 years of age should excel at providing these features. The results of the t-tests also suggest that it may be possible to describe a specific segment of the population over 65 years of age as "health conscious" consumers. From this study it was determined that the respondents whose health concerns influenced their choice of restaurants seemed to be more concerned about every attribute of the foodservice facilities they patronized than the respondents in the rest

of the sample. They appear to be seeking a certain "bundle of benefits" from the restaurants that they select. In particular, they wanted restaurants to provide: a comfortable music level and noise level; adjacent parking facilities; reasonably priced menu items; a comfortable room temperature; large variety of menu items; senior citizens discounts; menu items which are appropriate for special diets; and a non-smoking section; as well as excellent sanitation and service.

The following list summarizes the conclusions of this research:

- The dining patterns of the survey respondents were influenced by socio-demographic factors.
- The menu selections of respondents with health concerns and/or special diets were affected by their nutritional concerns.
- The consumption patterns of the respondents did not appear to be affected by their health concerns and/or special diets (with one exception).
- Sanitation and cleanliness were very important to all of the respondents.
- Restaurants should provide menu items which are appropriate for special diets.
- Many respondents expressed a desire for information about nutritional value restaurant menu items.

LIMITATIONS OF THE RESEARCH

As is the case with most exploratory research endeavors, there were several limitations inherent in this study which may have effected the generalizability of the results. To begin with, the demographic characteristics of the respondents in the sample differed from those of the average American over 65 years of age. There were more males than females in the sample which is the opposite of the distribution for the aging segment of U.S. population. It is conceivable that some of the relationships which were observed may

be biased by the over-representation of males in the group. The respondents also had higher median income levels than those which have been reported for the total U.S. population over 65. Thus, the results of the analysis may be overstating the economic status of the respondents. Almost all of the respondents were white, only 5% of the people in the sample were black. Therefore, the results of the analyses have limited value when trying to make conclusions about the dining patterns of the black respondents. The respondents in the sample were also more highly educated by comparison with the statistics for the total U.S. population over 65. This may mean that some of the authors observations regarding the dining patterns of the respondents were biased by the effects of education. Illiteracy may have prevented some of the participants from fully responding to all of the questions.

In light of the fact that the non-respondents were not contacted, the possibility of non-response bias must be considered. Financial constraints prevented the author from doing a random telephone interview of the non-respondents as originally planned. There is some research however, which suggests that data collected from the questionnaires which arrive later than the majority of the group, is similar to the information which might have been collected about the non-respondents, (Oppenheim, 1966). An informal analysis of the surveys which were received after the bulk of the questionnaires had been returned, did not reveal any dramatic differences or peculiar trends as compared with the earlier responses.

With regard to the statistical analyses which were performed, the chi-square test for independence may not have been appropriate for some of the comparisons. Many of the chi-square tables had cells with less than 5 responses. In other words, there were not enough respondents in each category to get an accurate chi-square statistic for the distribution, thereby increasing the probability of a Type I error. Considering this problem, the author attempted to evaluate the row and column totals for each Chi Square

table to determine if the distributions were skewed. Certain inconsistencies were noted during the process of discussing the results for each chi-square test for independence.

A control for the effects of the location of the respondents was not possible. Although the author attempted to determine what percentage of the 65+ population was reached in each county in Virginia, the data required for this analysis were not readily available from the U.S. Census Bureau. Information concerning the population density of each state is organized by the counties in each state. These data were not comparable with the information which was available from the company that provided the mailing list. It was very difficult to determine which zip codes were included within each county in the state. Time constraints prohibited the author from pursuing this issue further.

The results of this research study are also limited by the fact that the sample was cross-sectional in nature. The questionnaire was only able to address the dining patterns of the respondents for a particular period of time (30 days) as opposed to a longitudinal approach which would have obtained data over an extended period of time.

The sample was selected from the population of older adults living in Virginia; a state which may not be particularly representative of the entire U.S. population over 65. In 1986, there were approximately 606,000 people aged 65 and older, living in the Commonwealth of Virginia (Aging America, 1988). When compared with the other 49 states in the U.S., Virginia ranked sixteenth in terms of the total number of aged individuals residing there. Approximately 10.5% of the total population of Virginia were people over 65 years of age; whereas the national average is 12%. Thus, the percentage of older adults living in the Commonwealth of Virginia was lower than the figure for the majority of the states in the U.S. The Commonwealth ranked 41st when comparing the percentage of the state's population over 65 years of age (Aging America, 1988). It is important to note however, that between 1980-1986 the Commonwealth experienced a

19.9% increase in the number of adults over 65 of age; an above average rate of change. Therefore, there is a possibility that by the time this research study was conducted (in 1990) the percentage of the population over 65 may have been more comparable with the national average.

IMPLICATIONS FOR FUTURE RESEARCH

From the results of the statistical analyses, it was determined that the restaurant dining patterns of older adults who are concerned about their health may be significantly different from the dining patterns of individuals who are not on special diets and do not let their health concerns influence their choice of restaurants. Given that this research endeavor was exploratory in nature, further research is required in order to determine if these relationships hold true for larger samples of the population over 65 years of age.

At the outset of this research study, the assumption was made that the dining patterns of older adults would be affected by their health concerns because three of the top ten causes of morbidity amongst older adults are diet related (Aging America, 1988). Additional research is needed to determine if the dining patterns of individuals under 65 years of age are also affected by their health concerns and/or special diets. The findings of this research study should be compared with those obtained from a sample of younger adults.

In 1984, Schlenker suggested that elderly individuals who follow specially prescribed therapeutic diets may select their food more carefully than individuals who are not influenced by dietary restrictions. The results of this research seem to indicate that her suggestion also holds true for the restaurant dining patterns of older adults. However, the respondents who believed that their health concerns influenced their choice of restaurants may have been more conscientious about seeking "heart healthy" menu items and

maintaining good nutritional habits when dining away from home than the group who had been prescribed with special diets. Assuming that the respondents on special diets were given professional instruction regarding their diets, these findings are comparable with those of Wong, Krondl & Williams in 1982. They found that nutrition education programs for the elderly promote changes at the cognitive level but may not bring about significant changes in their actual dietary practices. Thus, further research is required in order to determine why the respondents who said that their health concerns influenced their choice of restaurants were more nutritionally conscientious when dining in restaurants than the individuals on specially prescribed diets.

SUMMARY

This exploratory research endeavor was attempted in order to learn more about the restaurant dining patterns of adults over 65 years of age. A mail survey was used to obtain information about the restaurant menu selections and consumption patterns of older adults living in the Commonwealth of Virginia. Statistical analyses of the data which was collected, revealed that there were several significant relationships between the socio-demographic characteristics of the respondents and their restaurant dining patterns. In addition, it was determined that the menu selections of the respondents whose health concerns influenced their choice of restaurant as well as those of the individuals on special diets were influenced by their nutritional concerns. With the exception of the amount of money spent on dinner meals, the consumption patterns of the respondents did not differ significantly. Although there were some significant differences in the restaurant features that the respondents with health concerns or special diets rated as important when choosing a restaurant, sanitation and cleanliness and prompt courteous service were rated as highly important by all of the individuals in the sample. In order to more effectively serve their

aging customers, operators in the foodservice industry need to become more informed regarding the restaurant dining patterns of individuals over 65 years of age.

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APPENDIX A

DRAFT VERSION

OF

SURVEY INSTRUMENT

Directions: Please circle the letter next to the appropriate response for each question.

PART I RESTAURANT DINING

1. Within the past month (30 days), approximately how often did you eat out in restaurants for each of the following meals? (Including fast-food places, cafeterias, family-style, full table service, etc.)

Breakfast	Lunch	Dinner
a. More than once per week	a. More than once per week	a. More than once per week
b. Once per week	b. Once per week	b. Once per week
c. 2-3 times per month	c. 2-3 times per month	c. 2-3 times per month
d. About once per month	d. About once per month	d. About once per month
e. Never*	e. Never*	e. Never*

*If you answered 'Never' for all three meals, please skip to question #37 on page 4.

2. During the past month, how much did your portion of the restaurant meal usually cost? (Please circle 'not applicable' if you did not eat out for that meal).

Breakfast	Lunch	Dinner
a. Less than $3	a. Less than $5	a. Less than $5
b. $3-$5	b. $5-$10	b. $5-$10
c. $6-$10	c. $11-$20	c. $11-$20
d. More than $10	d. More than $20	d. More than $20
e. Not applicable	e. Not applicable	e. Not applicable

3. During the past month, which type of restaurant did you select most often for each meal occasion. The following are examples of each type of restaurant:
Fast-food=McDonald's, Wendys, etc. **Cafeterias**=Morrison's, Piccadilly, etc.
Family Type=Bonanza, Shoney's, etc. **Full Service**=All others with full table service.

Breakfast	Lunch	Dinner
a. Fast Food	a. Fast Food	a. Fast Food
b. Cafeteria	b. Cafeteria	b. Cafeteria
c. Family Type	c. Family Type	c. Family Type
d. Full Service	d. Full Service	d. Full Service
e. Not applicable	e. Not applicable	e. Not applicable

4. During the past month, with whom did you eat in restaurants most often? (Circle **all** that apply).

a. With your spouse.
b. With your children.
c. With other relatives
d. With friends.
e. Usually eat alone

5. In general, what is the main reason why you go out to eat in restaurants? (Please choose only **one** response, the most important reason)

a. To socialize with family & friends
b. To celebrate an occasion
c. Cannot cook
d. To save time
e. To try new foods
f. Don't feel like cooking

6. On an average, how many miles away are the restaurants that you usually go to?

a. Less than 1 mile.
b. Between 1-5 miles.
c. Between 6-10 miles.
d. Between 11-20 miles.
e. More than 20 miles.

7. When going to a restaurant do you usually...

a. Drive yourself?
b. Ride with someone else?
c. Take a bus or taxi?
d. Walk or ride a bicycle?

PART II RESTAURANT FEATURES

How important are each of the following features to you when choosing a restaurant?
(Please rate each item on a scale from 1-4, with 1 being the lowest and 4 being the highest).

		Not Important	Somewhat Important	Important	Very Important
8.	Distance from your home or convenient location?	1	2	3	4
9.	Bright lighting in the parking lot?	1	2	3	4
10.	Parking adjacent or convenient to the restaurant?	1	2	3	4
11.	Access ramps for the handicapped?	1	2	3	4
12.	Availability of a non-smoking section?	1	2	3	4
13.	Comfortable room temperature?	1	2	3	4
14.	Music and noise level?	1	2	3	4
15.	Atmosphere and decor?	1	2	3	4
16.	Cleanliness/sanitation?	1	2	3	4
17.	Prompt courteous service?	1	2	3	4
18.	Large variety of menu items?	1	2	3	4
19.	Menu items which are appropriate for a special diet?	1	2	3	4
20.	Price of menu items?	1	2	3	4
21.	Senior citizens' discounts?	1	2	3	4
22.	Choice in size of portions?	1	2	3	4

23. When you choose a restaurant, do your health concerns and/or special dietary needs influence your choice of establishments?

    a. YES b. NO

24. When you choose a restaurant, does anyone you usually dine with have a health condition and/or special diet which would influence your choice of restaurants?

    a. YES Please specify_____ b. NO

During the past month, how satisfied were you with your restaurant experiences?

25.	Breakfast	a. **Not** Satisfied	b. Somewhat Satisfied	c. Satisfied	d. **Very** Satisfied
26.	Lunch	a. **Not** Satisfied	b. Somewhat Satisfied	c. Satisfied	d. **Very** Satisfied
27.	Dinner	a. **Not** Satisfied	b. Somewhat Satisfied	c. Satisfied	d. **Very** Satisfied

Please circle the number of the response which indicates how you feel about the following statements

		Disagree	Somewhat Disagree	Somewhat Agree	Agree
28.	Restaurants should provide seatingwith easy access for older adults	1	2	3	4
29.	Personal attention from waiters and waitresses is more important than the price of the food	1	2	3	4
30.	Restaurants should offer a wide range of food for people on special diets	1	2	3	4
31.	The price of the food is more important than personal attention from waiters and waitresses	1	2	3	4
32.	On their menus, restaurants should identify the items which are low in calories, fat, sodium, and cholesterol	1	2	3	4

42. In general, do you have difficulty chewing? a. YES b. NO

43. Do you need corrective lenses to read? a. YES b. NO

44. Do you have any difficulty walking? a. YES b. NO (Please skip to #46)

45. If you have difficulty walking, do you usually...?

a. Use a cane
b. Use a walker
c. Use a wheelchair
d. Walk with crutches
e. Walk slowly
f. None of the above

46. Generally speaking, how would you rate your overall health?

a. Very good. b. Good c. Fair d. Poor e. Very Poor

47. Regarding your weight, do you feel that you are...?

a. Somewhat thin b. At about your ideal body weight c. Somewhat overweight

PART V GENERAL INFORMATION

48. Please specify the year in which you were you born? 19___

49. Please specify your gender? Female Male

50. Please specify your race? White Black Other_____

51. What is your approximate weight? _____ pounds

52. What is your approximate height? _____ft. _____in.

53. Please indicate your marital status?

a. Single (never married) b. Married c. Divorced d. Widowed

54. Including yourself how many people live in your household? _____

55. Do you live with anyone <u>under 65</u> years of age? a. YES b. NO

56. <u>At home</u>, how often do you eat meals with the following people?

With your spouse	a. Never	b. Sometimes	c. Often	d. Always
With your children	a. Never	b. Sometimes	c. Often	d. Always
With other relatives	a. Never	b. Sometimes	c. Often	d. Always
With friends	a. Never	b. Sometimes	c. Often	d. Always

57. Please indicate the highest level of education and/or training that you completed?

a. Elementary b. Technical/Trade c. High school d. College e. Graduate School

58. Please indicate your current employment status?

a. Employed-full time (40 or more hours/week)
b. Employed-part time (less than 30 hours/week)
c. Unemployed (and looking for work)
d. Never worked outside the home
e. Retired

PART III DINING HABITS

33. In general, when you order a main entree, how often do you order each of the following?

Beef	a. Never	b. Sometimes	c. Often	d. Always
Poultry	a. Never	b. Sometimes	c. Often	d. Always
Pork	a. Never	b. Sometimes	c. Often	d. Always
Fish/Seafood	a. Never	b. Sometimes	c. Often	d. Always
A Vegetarian Dish	a. Never	b. Sometimes	c. Often	d. Always

34. When a choice is available on a restaurant menu, which method of preparation do you choose for each of the following items ? (Circle the appropriate number).

	Fried	Baked	Broiled	Grilled	Steamed
Beef	1	2	3	4	5
Poultry	1	2	3	4	5
Fish/Seafood	1	2	3	4	5
Pork	1	2	3	4	5

35. How often do you order dessert at a restaurant?

a. Never b. Sometimes c. Often d. Always

36. When you order a dessert at a restaurant it is usually...

a. Cake c. Fruit e. Ice Cream g. Pudding/Custard
b. Pie d. Cookies/brownie f. Pastry h. Frozen Yogurt

PART IV HEALTH STATUS

37. Do you have any of the following health conditions? Please check the appropriate boxes on the **left.**

38. If you have any of these health conditions are your eating habits influenced by them? Please check the appropriate boxes on the **right.**

YES	NO	Diabetes	YES	NO
YES	NO	Arthritis	YES	NO
YES	NO	Hypertension (e.g. high blood pressure)	YES	NO
YES	NO	Heart problems (e.g. arteriosclerosis, heart attack, etc.)	YES	NO
YES	NO	Cancer	YES	NO
YES	NO	High blood cholesterol level	YES	NO
YES	NO	Gastrointestinal problems (e.g. ulcers, diverticulosis, etc.)	YES	NO
YES	NO	Renal disease	YES	NO
YES	NO	Food allergies	YES	NO

39. Are you on a special diet of any kind? a. YES b. NO (Please skip to #42)

40. What kind of diet is it? (Circle all that apply)

a. Weight loss d. Low Potassium g. Bland (for digestive disorders)
b. Diabetic e. Low fat/Low cholesterol h. Soft or mechanically altered
c. Low sodium f. Fluid restricted

41. Was the diet you are following... (Circle all that apply)

a. Recommended by a doctor c. Suggested by a friend or relative?
b. Recommended by a dietitian? d. From a weight loss/diet center?
b. Your own idea? e. Recommended in a book or magazine?

59. In 1989, what was your total yearly income from employment and from **all** other sources for **all** members of your household, before taxes?

a. Less than $5,000	c. $10,001-15,000	e. $20,001-25,000	g. $30,001-50,000
b. $5,001-10,000	d. $15,001-20,000	f. $25,001-30,000	h. More than $50,000

Please provide any additional comments or suggestions you might have!

_____

_____

Optional:
If I may have your permission to contact you about this study, please provide your phone number below.
Phone number _____ Your Initials_____

When you have finished the survey, please fold it on the dotted lines so that the return address is showing. Staple or tape it closed and drop it in the nearest mailbox!

THANK YOU VERY MUCH FOR YOUR COOPERATION!

(Fold 1)

(Fold 2)

Return to: Kathleen Logsdon
3301 Post Rd. Apt. #22
Lexington, KY 40503

APPENDIX B

COVER LETTER

COLLEGE OF HUMAN RESOURCES

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061-0429

DEPARTMENT OF HOTEL, RESTAURANT & INSTITUTIONAL MANAGEMENT
(703) 231-5515 - Fascimile (703) 231-7826 - Telex 9103331861

October 22, 1990

Dear Virginia Resident:

I am a graduate student at Virginia Tech, working on a Masters Degree in the field of Hotel, Restaurant, and Institutional Management (HRIM). In order to complete my graduate studies, I am conducting a survey of individuals aged 55 and older, living in the Commonwealth of Virginia.

Please take a few minutes to complete the enclosed questionnaire. It is designed to obtain information that will enable restaurant owners to provide better service for their customers. The return postage has already been paid and none of the information that you provide can be linked to your name in any way! Every questionnaire is absolutely anonymous!

I would greatly appreciate your participation in this study. In addition to helping me with my research, this survey will also make your future dining experiences more enjoyable!

If you have any questions regarding this project please call Dr. Mahmood Khan, Professor and Assistant Head of the HRIM program at 703-231-5515. Thank you very much, your time and effort are greatly appreciated!

Sincerely,

Kathleen Logsdon

APPENDIX C

FOLLOW-UP TELEPHONE INTERVIEW

TELEPHONE FOLLOW-UP TO PRE-TEST

Hello, my name is KATHLEEN LOGSDON, I am a graduate student from Virginia Tech and I am conducting of the restaurant dining patterns of older adults. A few weeks ago someone in your household with the initials _____ completed a survey for me and I would like to know if I may speak to them for a few minutes if they are available at this time.

YES... (proceed with questions)
NO ... May I call back at another time? When would you suggest that I call, at _____on _____

When the appropriate person is reached...
Hello, my name is Kathleen Logsdon, I am a graduate student from Va. Tech, do you remember filling out a survey for me about your restaurant dining patterns?

If YES...I really want to thank you for returning the questionnaire and for agreeing to participate in this follow-up interview!
If NO... explain...

The study that I am doing is part of the research that is required for my graduate degree and I need to know a few things about how often you eat out in restaurants.

If you don't mind, I would like to ask you a few more questions that will help me with my research. This should only take a few minutes. OK???

If YES... I'd like to start by asking you some questions about your restaurant dining habits and then I would like to know if you had any questions or problems filling out the questionnaire?

If NO... May I call you back at another time?_____

PART I RESTAURANT DINING

1. Did you eat out (in restaurants) last week? YES NO (skip to #14)

2. How many times did you eat out for:

Breakfast	Lunch	Dinner
a. Not at all	a. Not at all	a. Not at all
b. 1-2 times	b. 1-2 times	b. 1-2 time
c. 3-4 times	c. 3-4 times	c. 3-4 time
d. 5-6 times	d. 5-6 times	d. 5-6 times
e. Every day.	e. Every day.	e. Every day.

3. Would you this is typically how often you eat out per week? YES NO

   Explain_____

4. Do you remember approximately how much your portion cost, for... was it...?

Breakfast	Lunch	Dinner
a. Less than $3	a. Less than $5	a. Less than $
b. $5-$10	b. $5-$10	b. $5-$10
c. $11-$20	c. $11-$20	c. $11-$20
d. More than $20	d. More than $20	d. More than $20
e. Not applicable	e. Not applicable	e. Not applicable

5. Where did you eat out for...?

Breakfast	Lunch	Dinner
a. Fast Food	a. Fast Food	a. Fast Food
b. Cafeteria	b. Cafeteria	b. Cafeteria
c. Family Type	c. Family Type	c. Family Type
d. Full Service	d. Full Service	d. Full Service
e. Not applicable	e. Not applicable	e. Not applicable

Breakfast _____ Lunch _____ Dinner _____

6. Is that the type of restaurant you typically choose for each meal occasion?

Breakfast	Lunch	Dinner
YES NO	YES NO	YES NO

7. When you choose these restaurants, did your health concerns and/or special dietary needs influence your decision about where to eat?

a. YES b. NO

8. Why did you chose to eat out in a restaurant for...?

Breakfast

a. To socialize with family & friends.
b. To celebrate an occasion.
c. Cannot cook.
d. To save time.
e. To try new foods.
f. Did not feel like cooking.

Lunch

a. To socialize with family & friends.
b. To celebrate an occasion.
c. Cannot cook.
d. To save time.
e. To try new foods.
f. Did not feel like cooking.

Dinner

a. To socialize with family & friends.
b. To celebrate an occasion.
c. Cannot cook.
d. To save time.
e. To try new foods.

9. In general, who did you eat out with most often last week? (Circle all that apply).

a. With your spouse.
b. With your children.
c. With other relatives.
d. With friends.
e. Usually eat alone
f. Not applicable

10. Is that usually the case? YES NO
Explain_____

PART III DINING HABITS

11. Do you remember what you ordered as a main entree on _____?
YES If so, was it....? NO

a. Poultry
b. Beef
c. Pork
d. Veal
e. Lamb
f. A vegetarian dish

12. Did you have a choice about the way that the entree was prepared?
YES NO
If so, how did you choose to have it prepared?

Beef	Poultry	Fish/Seafood	Pork
a. Fried	a. Fried	a. Fried	a. Fried
b. Baked	b. Baked	b. Baked	b. Baked
c. Broiled	c. Broiled	c. Broiled	c. Broiled
d. Steamed	d. Steamed	d. Steamed	d. Steamed
e. Grilled	e. Grilled	e. Grilled	e. Grilled

13. Is that usually how you like to have it prepared? YES NO
Explain_____

PART IV HEALTH STATUS

14. Generally speaking, how would you rate your overall health?

a. Very good.
b. Good.
c. Fair
d. Poor
e. Very poor
g. Other
(please specify)_____

15. Do you have any health conditions which have an effect on you diet/eating patterns? YES NO

(Explain)_____

SPECIFIC QUESTIONS

Now I'd like to ask you some questions about your responses to the survey!
I noticed that you....

Did you have any problems filling out the questionnaire?

Do you have any suggestions for me on how to improve the questionnaire?

Comments on how the questions are worded or about the content of the questionnaire?

Any other questions? Anything you would like to know?

THANK YOU VERY MUCH, I REALLY APPRECIATE YOU TAKING THE TIME TO ANSWER MY QUESTIONS!!!

APPENDIX D

FINAL VERSION

OF

SURVEY INSTRUMENT

DIRECTIONS: Please circle the letter next to the appropriate response for each question. If a particular item does not apply to you, please choose 'not applicable.'

PART I RESTAURANT DINING

1. Within the past month (30 days), approximately how often did you eat out in a restaurant for each of the following meals? (Including fast-food places, cafeterias, family-style, full table service, etc.)

Breakfast	Lunch	Dinner
a. More than once per week	a. More than once per week	a. More than once per week
b. Once per week	b. Once per week	b. Once per week
c. 2-3 times per month	c. 2-3 times per month	c. 2-3 times per month
d. About once per month	d. About once per month	d. About once per month
e. Never*	e. Never*	e. Never*

*If you answered 'Never' for all three meals, please skip to question #35 on page 4.

2. During the past month, how much did your portion of the restaurant meal usually cost? (Please choose 'not applicable' if you did not eat out for that meal).

Breakfast	Lunch	Dinner
a. Less than $3	a. Less than $5	a. Less than $5
b. $3-$5	b. $5-$10	b. $5-$10
c. $6-$10	c. $11-$20	c. $11-$20
d. More than $10	d. More than $20	d. More than $20
e. Not applicable	e. Not applicable	e. Not applicable

3. During the past month, which type of restaurant did you select most often for each meal occasion. Please consider the following as examples of the restaurants in each category:

Fast-food=McDonald's, Wendys, etc. **Cafeterias**=Morrison's, Piccadilly, etc.
Family Type=Bonanza, Shoney's, etc. **Full Service**=All others with full table service.

Breakfast	Lunch	Dinner
a. Fast Food	a. Fast Food	a. Fast Food
b. Cafeteria	b. Cafeteria	b. Cafeteria
c. Family Type	c. Family Type	c. Family Type
d. Full Service	d. Full Service	d. Full Service
e. Not applicable	e. Not applicable	e. Not applicable

4. During the past month, with whom did you eat in restaurants most often? (Circle **all** that apply).

a. With your spouse
b. With your children
c. With other relatives
d. With friends
e. Usually eat alone

5. In general, what is the main reason why you go out to eat in restaurants? (Please choose only **one** response, pick the reason that you feel is most important.)

a. To socialize with family & friends
b. To celebrate an occasion
c. Cannot cook
d. To save time
e. To try new foods
f. Don't feel like cooking

6. On an average, how far do you travel to the restaurants that you usually go to?

a. Less than 1 mile.
b. Between 1-5 miles.
c. Between 6-10 miles.
d. Between 11-20 miles.
e. More than 20 miles.

(Please continue on the next page).

7. When going to a restaurant, how do you usually get there?

a. Drive yourself?
b. Ride with someone else?
c. Take a bus or taxi?
d. Walk or ride a bicycle?

PART II RESTAURANT FEATURES

How important are each of the following features to you when choosing a restaurant? (Please rate each item on a scale from 1-4, with 1 being the lowest and 4 being the highest).

		Not Important	Somewhat Important	Important	Very Important
8.	Distance from your home or convenient location?	1	2	3	4
9.	Bright lighting in the parking lot?	1	2	3	4
10.	Parking adjacent or convenient to the restaurant?	1	2	3	4
11.	Access ramps for the handicapped?	1	2	3	4
12.	Availability of a non-smoking section?	1	2	3	4
13.	Comfortable room temperature?	1	2	3	4
14.	Music and noise level?	1	2	3	4
15.	Atmosphere and decor?	1	2	3	4
16.	Cleanliness/sanitation?	1	2	3	4
17.	Prompt courteous service?	1	2	3	4
18.	Large variety of menu items?	1	2	3	4
19.	Menu items which are appropriate for a special diet?	1	2	3	4
20.	Price of menu items?	1	2	3	4
21.	Senior citizens' discounts?	1	2	3	4
22.	Choice in size of portions?	1	2	3	4

23. When you choose a restaurant, do your health concerns and/or special dietary needs influence your choice of establishments?

a. YES b. NO

24. When you choose a restaurant, does anyone you usually dine with have a health condition and/or special diet which would influence your choice of restaurants?

a. YES Please explain _____ b. NO

25. During the past month, how satisfied were you with your restaurant experiences for each meal? (If you did not eat out, please choose 'not applicable').

Breakfast	Lunch	Dinner
a. Not Satisfied	a. Not Satisfied	a. Not Satisfied
b. Somewhat Satisfied	b. Somewhat Satisfied	b. Somewhat Satisfied
c. Satisfied	c. Satisfied	c. Satisfied
d. Very Satisfied	d. Very Satisfied	d. Very Satisfied
e. Not Applicable	e. Not Applicable	e. Not Applicable

(Please continue on the next page).

Please circle the number of the response which indicates how you feel about the following statements

		Disagree	Somewhat Disagree	Somewhat Agree	Agree
26.	Restaurants should provide seating with easy access for older adults	1	2	3	4
27.	Personal attention from waiters and waitresses is more important than the price of the food	1	2	3	4
28.	Restaurants should offer a wide range of food for people on special diets	1	2	3	4
29.	The price of the food is more important than personal attention from waiters and waitresses	1	2	3	4
30.	On their menus, restaurants should identify the items which are low in calories, fat, sodium, and cholesterol	1	2	3	4

PART III DINING HABITS

31. In general, when you order a main entree, how often do you order each of the following?

Beef	a. Never	b. Sometimes	c. Often	d. Always
Poultry	a. Never	b. Sometimes	c. Often	d. Always
Pork	a. Never	b. Sometimes	c. Often	d. Always
Fish/Seafood	a. Never	b. Sometimes	c. Often	d. Always
A Vegetarian Dish	a. Never	b. Sometimes	c. Often	d. Always

32. When a choice is available on a restaurant menu, which method of preparation do you choose for each of the following items ? (Circle the appropriate number).

	Fried	Baked	Broiled	Grilled	Steamed
Beef	1	2	3	4	5
Poultry	1	2	3	4	5
Fish/Seafood	1	2	3	4	5
Pork	1	2	3	4	5

33. How often do you order dessert at a restaurant?

a. Never (Please skip to #35) b. Sometimes c. Often d. Always

34. When you order a dessert at a restaurant it is usually... (Please circle only **one** response, choose the item that you are most likely to order).

a. Cake	c. Fruit	e. Ice Cream	g. Pudding/Custard
b. Pie	d. Cookies/brownie	f. Pastry	h. Frozen Yogurt

(Please continue on the next page).

PART IV HEALTH STATUS

35. Do you have any of the following health conditions? Please check the appropriate boxes on the **left.**

36. If you do have any of these health conditions are your eating habits influenced by them? Please check the appropriate boxes on the **right.**

YES	NO		YES	NO
YES	NO	Diabetes	YES	NO
YES	NO	Arthritis	YES	NO
YES	NO	Hypertension (e.g. high blood pressure)	YES	NO
YES	NO	Heart problems (e.g. arteriosclerosis, heart attack, etc.)	YES	NO
YES	NO	Cancer	YES	NO
YES	NO	High blood cholesterol level	YES	NO
YES	NO	Gastrointestinal problems (e.g. ulcers, diverticulosis, etc.)	YES	NO
YES	NO	Renal disease	YES	NO
YES	NO	Food allergies	YES	NO

37. Are you on a special diet of any kind? a. YES b. NO (Please skip to #40)

38. What kind of diet is it? (Circle all that apply.)

a. Weight loss
b. Diabetic
c. Low sodium
d. Low Potassium
e. Low fat/Low cholesterol
f. Fluid restricted
g. Bland (for digestive disorders)
h. Soft or mechanically altered

39. Was the diet you are following... (Circle all that apply.)

a. Recommended by a doctor
b. Recommended by a dietitian?
c. Your own idea?
d. Suggested by a friend or relative?
e. From a weight loss/diet center?
f. Recommended in a book or magazine?

40. In general, do you have difficulty chewing? a. YES b. NO

41. Do you need corrective lenses to read? a. YES b. NO

42. Do you have any difficulty walking? a. YES b. NO (Please skip to #44.)

43. If you have difficulty walking, do you usually...?

a. Use a cane
b. Use a walker
c. Use a wheelchair
d. Walk with crutches
e. Walk slowly
f. None of the above

44. Generally speaking, how would you rate your overall health?

a. Very good. b. Good c. Fair d. Poor e. Very Poor

45. Regarding your weight, do you feel that you are...?

a. Somewhat thin b. At about your ideal body weight c. Somewhat overweight

(Please continue on the next page).

PART V GENERAL INFORMATION

46. Please specify the year in which you were you born? 19___

47. Please specify your gender? Female Male

48. Please specify your race? White Black Other_____

49. What is your approximate weight? _____ pounds

50. What is your approximate height? _____ft. _____in.

51. Please indicate your marital status?

a. Single (never married) b. Married c. Divorced d. Widowed

52. Including yourself, how many people live in your household? _____

53. Do you live with anyone under 65 years of age? a. YES b. NO

54. At home, how often do you eat meals with the following people?
(If part of the question does not apply to you, please circle 'never').

Your spouse	a. Never	b. Sometimes	c. Often	d. Always
Your children	a. Never	b. Sometimes	c. Often	d. Always
Other relatives	a. Never	b. Sometimes	c. Often	d. Always
With friends	a. Never	b. Sometimes	c. Often	d. Always

55. Please indicate the highest level of education and/or training that you completed?

a. Elementary School
b. Junior High School
c. High school
b. Technical/Trade
d. College/University
e. Graduate School

56. Please indicate your current employment status?

a. Employed-full time (40 or more hours/week)
b. Employed-part time (less than 40 hours/week)
c. Unemployed (and looking for work)
d. Never worked outside the home
e. Retired

57. In 1989, what was your total yearly income from employment and from **all** other sources for **all** members of your household, before taxes?

a. Less than $5,000
b. $5,001-10,000
c. $10,001-15,000
d. $15,001-20,000
e. $20,001-25,000
f. $25,001-30,000
g. $30,001-50,000
h. More than $50,000

If you have any additional comments or suggestions, please let us know!

_____

_____

_____

_____

THANK YOU VERY MUCH FOR YOUR PARTICIPATION!

Please place your completed questionnaire in the enclosed, postage-paid envelope and mail it to:
The HRIM Department, Hillcrest Hall, P.O. Box 850 Blacksburg, VA 24063-9985

APPENDIX E

RESPONDENTS' COMMENTS

Summary of Respondents' Comments

1. A good balance between service, food quality and price is what I like.

2. More restaurants should offer low sodium and low cholesterol menus.

3. Turnpike and other food establishments based on travel routes should offer skim milk, vegetables minus fat, fat-free yogurt, fresh fruit, etc., so one can follow good nutritional practices.

4. We just like to get out of the house. also I don't like to clean up after eating in.

5. As one ages, quality is more important than quantity. I love to cook, but time schedule does not permit me to cook-in except on weekends - I'm a good cook - raised six children - they, my friends & relatives all agree I'm a good cook - do however enjoy nice atmosphere and fine elegant service.

6. Menu in restaurants should indicate whether food was prepared using sugar or other glucose; salt; or animal fat.

7. Some restaurant could make a fortune by offering a variety of small entree portions in place of one large portion.

8. Eating out is one of my favorite pastimes.

9. Eating out is a pleasure.

10. I am a diabetic and would appreciate more menus applicable to my situation.

11. Seating arrangements are important. Dislike small tables for 2 people.

12. You need to consider type and cleanliness of silverware and the availability of clean, modern and maintained restrooms. Women's restrooms are generally very poor.

13. I would like table cloth and/or place mats. Like waitress to have hair nets or hair styled not to be floating free. No hands on hair.

14. Cleanliness/sanitation is very important.

15. When dining at a restaurant, atmosphere and decor are more important than price. Quality of food is next. Price is third.

16. Irritated that smokers are seated in better sections than non-smokers.

17. We do not dine out very often, except vacation trips to visit family. We are not hard to please - cleanliness and courteous service are most important.

18. Dining out for senior citizen should be an experience of pleasure. We don't like being babyed - just treat us with respect and friendliness.

19. A restaurant specializing in low fat and/or sugar, etc. meals. I believe it would be highly patronized. I'll dine there!

20. More emphasis on low-fat, low sugar, low cholesterol.

21. Simply put: good food, good service, good facilities and service at a fair price, including tax and tips. Also consistency. Even one bad performance is remembered.

VITA

Kathleen Petty Logsdon, daughter of Donald and Ann Logsdon was born in West Palm Beach Florida on June 25, 1964. She completed her secondary education in Merrick, Long Island, New York and graduated from W.C. Mepham High School in 1982.

She received a Bachelor of Science degree in Public Health Nutrition from the University of North Carolina, Chapel Hill in May 1986. She began her graduate work in the Hotel, Restaurant and Institutional Management at Virginia Polytechnic Institute and State University in August of 1986. Throughout her tenure at Virginia Tech she was jointly employed by the Department of Hotel, Restaurant, and Institutional Management and University Dining Services as a graduate teaching assistant.