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PERCEIVED HEALTH STATUS AND HEALTH PROMOTION BEHAVIORS IN BLACK AND WHITE INFORMAL CAREGIVERS OF IMPAIRED ELDERS

by

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Submitted in partial fulfillment of the requirements
for the degree Doctor of Philosophy

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Patricia G. McDonald

PERCEIVED HEALTH STATUS AND HEALTH PROMOTION BEHAVIORS IN BLACK AND WHITE INFORMAL CAREGIVERS OF IMPAIRED ELDERS

Abstract

by

PATRICIA ELAINE McDONALD

Caregiver health and its consequences are a major concern for nursing. Many studies have examined health promoting behaviors (Walker, Volkan, Sechrist & Pender, 1988; Duffy, 1993), but few studies exist on health promotion of caregivers. This study examined the effects of age, gender, race, and length of caregiving on perceived health status and health promotion behaviors in Black and White informal caregivers of impaired elders.

The research design was secondary analysis of an existing data set, based on a conceptual model linking perceived health status and health promoting behaviors. A sample of 136 Black and 259 White caregivers was recruited from Northeastern Ohio through random digit dialing, who were subsequently interviewed face to face. Eligibility criteria were English speaking caregivers, who provided unpaid assistance or care, for a minimum of five hours a week, to an impaired older person 60 years of age or older living in the community. The adequacy and integrity of the original data set was determined and the data were valid. Test-retest reliability was established for the seven-item

Health Promoting Behaviors questionnaire and the open-ended question, "In general, what do you do to stay healthy?" based on a two-to-four week interval for data collection. Data were analyzed using t-tests and multiple regression analysis. The open-ended question was answered using content analysis.

The major findings in this study were: (1) there was no difference in perceived health status in the two racial groups; (2) most caregivers in the study rated their health as good; (3) the total number of health promoting behaviors were significantly different, with Whites reporting a higher frequency; (4) the overall fit of the conceptual model was significant, and a significant relationship was found between perceived health status and health promoting behaviors of caregivers; (5) caregivers were interested in their health, as evidenced by self report; and (6) the view that accepted racial categories of 'Black' and 'White' have no culture salience was supported. A lack of significance between Black and White caregivers in perceived health status was an unexpected finding. Yet, White caregivers participated in more health promoting behaviors than Black caregivers, suggesting small variability in perceived health status. Or, there are other factors that influenced this result.

This work is dedicated in loving memory of my grandparents, Thomas H. Greene and Bertha Mae Brinson Greene, and my aunt Helen Greene Fields, who inspired me to select nursing as a profession.

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CHAPTER I

INTRODUCTION

This study examined how age, gender, race, and length of caregiving influence perceived health status, and, in turn, how perceived health status affects health promotion behaviors in informal caregivers of impaired elders. Health promotion has been defined as the process of fostering awareness, influencing attitudes and identifying alternatives so that individuals can make informed choices and change their behavior to achieve an optimum level of physical and mental health (Redland & Stuifbergen, 1993). Pender (1987) argues that health-promoting behaviors almost without exception are continuing activities that must be an integral part of an individual's life style.

Health promotion that is directed toward encouraging basically healthy people "to adopt and maintain behaviors that will help them live longer and better" is important not only for adults in our society (Wallack & Winkleby, 1987, p. 925), but is particularly critical for caregivers of frail elders. While caregivers of older adults attend to the health needs of the care recipient, their own health is frequently neglected. Often caregivers themselves become ill or die because of health problems. Successful incorporation of health-promoting behaviors into one's lifestyle requires that individuals include health

practices as part of their daily pattern of living (O'Brien, 1993). However, these practices may not be given careful attention by caregivers because of the nature of caregiving. Further, the perception of caregivers' health status influences health promoting behaviors, and it is believed that one's perception of health may be influenced by several factors including age, gender, race, and length of caregiving.

This study examines the influence of age, gender, race, and length of time caregiving on perceived health status, as well as the effect of perceived health status on health promoting behaviors of informal caregivers and contributes to knowledge development in this area. Differences or similarities in perceived health status and health promoting behaviors are explored in two racial groups (Blacks and Whites), to indicate whether or not a need exists to develop and test relevant interventions for improving caregiver health. Thus, the results of this study can assist clinicians in the design of interventions toward improved health behaviors and practices of Black and White caregivers. An understanding of factors that facilitate or impede effective health-related lifestyles will lead to the development of health education programs and outreach services that are culturally competent for this caregiving population.

This research was based on secondary analysis of an existing data set. The study was supported, in part by NINR Grant No. R01 3381, titled "Black vs White Caregivers: Formal/Informal Service Use".

Background and Statement of the Problem

Past research has established that most elders are cared for at home, and that informal caregivers are important in the provision of long term care for frail older adults (Brody, 1985; Stone, Cafferata, & Sangl, 1987). Brody (1985) contends that few people reach the end of life without experiencing some period of dependency. More years of dependency mean more years during which there must be someone on whom to depend. At the present time approximately 80-90 percent of older Americans in need of assistance are cared for in the home and prefer informal care in the community to institutionalization (Brody, 1985; Segall & Wykle, 1988-1989). Additionally, the number of frail elders residing in the community has increased, not only because of the proportional growth of elders in the general population and the prevalence of chronic diseases, but also because of socioeconomic factors, such as the cost and accessibility of nursing homes (Killeen, 1989). Informal caregivers are increasingly maintaining chronically ill elders outside of costly institutional settings for extended periods of time.

The informal caregiving process is indeed complex, and has been deemed stressful by a number of researchers (Baldwin, Kleeman, Stevens, & Rasin, 1989; Pearlin, Mullan, Semple, & Skaff, 1990; Riffle, 1989). Many of the informal caregivers are elderly themselves, and because caregiving can be both physically and psychologically taxing, concern for the health of a caregiver is warranted (Killeen, 1989). Society, and in particular nursing, cannot afford to lose caregivers simply because they are not taking care of themselves. Not only will there be fewer caregivers providing care, but caregivers will also need care. The loss of informal caregivers would significantly impact the overall costs and quality of health care. What is not well known is how nurses can promote the health of these informal caregivers, consequently preventing the ultimate circumstance which, for some, has been premature death of the caregiver (George, 1991). George (1991) reported a caregiver death rate of nine percent versus 4.4 percent in a comparable community sample of adults over a one-year period.

Based on a review of literature of caregiver health, Wright, Clipp, and George (1993) developed a model depicting health consequences of the caregiving experience:

> "Chronic illness in a close relative leads to the caregiver role; caregiving demands lead to stress; stress and situation-specific factors

> combine and lead to dysphoria. Dysphoria can, in some cases, lead to ineffective coping and, in vulnerable individuals, to depression. Depression may compromise the immune system; depression and an impaired immune system lead to adverse health consequences. This chain of events can be interrupted if caregivers cope effectively, and have support and better than average resources. In addition, caregivers must seek adequate health care for themselves, which many apparently do not" (p. 189).

This model suggests that caregivers' neglect of self-care needs leads to increased risk of developing a number of physical and psychological problems. Thus, health promoting behaviors may postpone the development of these problems for which this population is at risk, allowing caregivers to remain healthier and extending their caregiving activities for longer periods of time.

Health Promotion Behaviors

Although a number of studies document health promotion activities in the general population, such behaviors have not been investigated among caregivers of impaired elders. By the year 2030, one of every four Americans will be 60 years of age or older, and with this graying of America, health-care costs are spiraling upward. For example, in 1989, 11.1 percent of the U. S. gross national product was spent for health care, and a disproportionate amount was spent on elders in their last years. As a result of this enormous expense, more attention has been given in recent

years to health promotion and preventive health measures, among impaired elders and their caregivers.

Only two studies were found, however, that specifically addressed health promotion behaviors of caregivers. Killeen (1989) examined health promotion practices of family caregivers of frail elders, and O'Brien (1993) examined health-promoting behaviors of spousal caregivers of individuals with multiple sclerosis. Neither researcher focused on the relationship between perceived health status and health promotion practices based on age, gender, race, and length of caregiving as proposed in this study.

Perceived Health Status

Perceived health status has been conceptualized as a cognitive-perceptual factor which directly influences health promoting behaviors (Pender, 1987). Further, perceived health status appears to play a role in the frequency and intensity of health-promoting behaviors.

Pender and Pender (1986) in studying 377 adults, found that perceived health status was a significant determinant of behavioral intentions to attain or maintain recommended weight, an important health practice. Those individuals who perceived themselves to be in good health reported more frequent intentions to control weight than persons who reported their health status as fair or poor. Further,

Dishman, Sallis, Orenstein (1985) concluded from a review of studies focused on the determinants of participation in supervised exercise programs, that perceptions of being in good health are repeatedly associated with an increased probability of continuing exercise behavior. On the other hand, Sidney and Shephard (1982) observed that the prolonged experience of uncomfortable symptoms, even in the absence of identifiable illness may represent a threat, induce fear and avoidance, and reduce personal capacity to engage in positive health behaviors.

Perceived health status was among the strongest determinants of health promoting behaviors in two studies of ambulatory cancer patients (Frank-Stromborg, Pender, Walker & Sechrist, 1990), and blue collar workers (Weitzel, 1989). Subsequently, perceived health status was selected as a variable for study in this research to examine whether an association of perceived health status and health promoting behaviors exists in caregivers of impaired elders.

Pender (1987) posits that perceived health status is a determinant of frequency and intensity of health promoting behaviors, and the higher the perception of health, the more likely an individual is to engage in health promoting behaviors. Because the relationship of perceived health status and health promoting behavior had

not been examined in the caregiver population, this study explored the assumption that the relationship holds for a caregiver sample.

The influence of perceived health status on health behaviors has been demonstrated in other populations (Frank-Stromborg, Pender, Walker & Sechrist, 1990; Weitzel, 1989). Because very little is known about health behaviors in caregivers (Killeen, 1989; O'Brien, 1993), this study examines the impact of a cognitive perceptual factor, perceived health status, on health behaviors of Black and White caregivers. If the motivations that influence health behaviors are known, competent interventions can be developed to modify those behaviors that pose a threat to caregiver health.

Age

Age has been posited to have a direct relationship with perceived health status in this study. There are several studies that demonstrate age effects on caregiver health (Gwyther, 1992; Pruchno & Potashnik, 1989). In examining the determinants of health-promoting lifestyles in older persons, Duffy (1993) found that older subjects with poorer health less often exercised or ate well. Further, Walker, Volkan, Sechrist, and Pender (1988) found that older adults had higher scores in overall health promoting life style than did both young and middle-aged

adults. From their study, five major health-promoting life-style patterns were identified among older adults, depicting a heterogeneous group with varying needs for health promotion programming. Consequently, many informal caregivers who are themselves elderly, may experience an increase in chronic illness and functional disability, and would benefit from positive lifestyle modifications and/or health practices.

Gender

Differences in gender have been examined relative to caregiver health. Interestingly, George (1991) found that despite their advantage in life expectancy, female caregivers were substantially more likely to die than males, even though the males were on average almost four years older.

While gender differences in perceived health status have been recognized, Ratner, Bottorff, Johnson, and Hayduk (1994) noted that gender differences are rarely incorporated into models of health promotion. They speculated that this lack of attention is due to the widely assumed view that causal mechanisms influencing health promoting behavior are identical for men and women, and consequently, interventions used would be suitably identical (Ratner, Bottorff, Johnson & Hayduk, 1994). It is argued here, however, that exploration and clarification

of possible differences is critical, and that understanding gender differences may have profound implications for the development of nursing knowledge. Further, if it is determined that men and women differ in health behaviors, this information may ultimately influence the development of effective intervention programs for both groups.

Race

Another factor that may affect caregiver perceived health status is the disparity between the health of minority and majority populations (Reed, Darity, Roman, Baquet, & Roberson, 1991). Differences in the health status of Blacks and Whites have been documented in this country for as long as health data have been collected (Manton, Patrick & Johnson, 1987). These differences have persisted in spite of dramatic increases in life expectancy and improvements in the health status of the general population.

During most of the 1980s, the gap between life expectancy of Black and White Americans widened. White Americans are living longer, while the average life span of Blacks declined from a high of 69.7 years in 1984 to 69.2 years in 1988. This disparity is mirrored in disproportionately higher mortality in Blacks from many causes. According to Braithwaite and Taylor (1992), cancer, heart disease and stroke, cirrhosis, diabetes, and

infant mortality, unintentional injuries, and homicide were identified as the largest contributors to an estimated 60,000 excess deaths of Blacks in this country by the Secretary's Task Force on Minority Health in 1985.

It has been suggested also that caregiving issues which adversely affect caregiver health may vary by race (Montgomery & McGlinn-Datwyler, 1990). For example, a greater proportion of older Black persons are cared for at home compared with Whites. Belgrave, Wykle, and Choi-Jung (1993) found that elderly Blacks are currently admitted to nursing homes at between half and three-quarters the rate of elderly Whites. Montgomery and McGlinn-Datwyler (1990) further argue that minority elders may need care and assistance at a younger age in the family's life cycle when attention is still focused on the care of younger members. The tendency to have lower incomes, poorer housing, education, and physically demanding jobs in labor intensive or domestic settings pose higher risks of injury, and a greater likelihood of minority elders having more chronic diseases, poorer health habits, and higher levels of disability at younger ages. Most Black caregivers, by necessity, work outside the home (Butler, 1987), and coupled with the demands of providing care to another person, it is believed they neglect their own health even more so than Whites.

Manton, Patrick, and Johnson (1987) delineate sources of health differentials in the health status of Blacks and Whites, including differences in lifestyle (for example, use of alcohol and tobacco; nutrition), and poorer knowledge of health practices. It has been argued further that in the general population, the amount of chronic illness and disability in Blacks is strikingly disproportionate to their White counterparts (House, Kessler, and Herzog, 1990), and occurs at earlier ages. Disparity between the health of Black and White populations has been documented (Reed, Darity, Roman, Baquet, & Roberson; 1991). Blacks have the lowest life expectancy, yet often have health problems that can be prevented (Wykle & Kaskel, 1991). However, a dearth of knowledge exists related to caregiver health status in these two racial groups, and to perceived health status as it relates to health promoting behaviors.

Although health promotion and preventive health measures have received increased attention in the past decade, there has been little research done on the promotion of health behaviors for Blacks (Foster, 1992; Millon-Underwood & Sanders, 1990), and caregivers in particular. Wykle, Taylor, Belgrave, and Namazi (1991) concluded from their study that Black caregivers had poorer health, greater sickness, greater distress, and more

depression than White caregivers. The discrepancy in health status among Black and White caregivers may suggest that health promotion behaviors are different for these two racial groups, but these differences have not been fully explored. Because Blacks have lower life expectancy, poorer health, more chronic diseases, and higher levels of disability at younger ages, it is important to study their health behaviors.

Racial Classification

A primary dilemma in studying race is how to define racial identities. Traditional categories of American research (i. e., 'Black' and 'White') are not reflective of cultural or behavioral categories; rather classification is based on alleged color (Gaines, 1994). The categories foreshadow problems with racial classifications in that there exists no intrinsically significant human features. Cultures have selected specific features as worthy of concern and hence as criteria of inclusion or exclusion. The difference in the group to which one is assigned depends not on biology, but on local cultural context and social history. Assertions of the biological basis of differences among races are used to justify discrimination, prejudice and poverty (Boas, 1940). Indeed, Boas (1940), the founder of United States Anthropology, long ago demonstrated that so-called races did not exhibit distinct

religious, linguistic, or general cultural patterns. That is "race" could not be related to behavior.

'White' and 'Black' categories were created from governmental census and adopted as an identity. The term "Negro" was used in the 1930's and 1940's; however, "colored" was a prior designation used before that in the 1920's. The research of Dominquez (1986) examined these fundamental shifts in definitions, that is, the racial classification system or racial identities that have been restructured over the years. She described individuals' conscious manipulation of the system of classification, and their subjection to its internal logic. Terms such as Black, Negro, Colored, Black American, and Afro-American do not tell actual ancestry, only that there is social knowledge (which may be faulty) that a person has some African ancestry.

An anthropological approach to the study of race aims to deconstruct these labels that conceal rather than reveal cultural affiliation, identity, or ethnicity (Gaines, 1994). While the main structure of the present research is formulated in terms of "race", it is recognized that the terms 'Black' and 'White' are not adequate, but it is reasonable to proceed, because the original data source used "race". This concept may indeed prove to be a less useful model than that of culture and ethnicity for

understanding differences in perceived health status and health promoting behaviors. Nevertheless, a substantial effort was made in Chapter 4 to classify identities of those subjects categorized as 'Black' and 'White' caregivers in this study.

Length of Caregiving

Many caregivers neglect their own health due to the demands over time of providing care to another person (Riffle, 1989). Using daily health diaries and simultaneous recording of caregiving responsibilities, Connell and Schulenberg (1990) were able to demonstrate that caregivers neglected their own self-care needs whenever caregiving demands increased. Further, the longer caregivers had been involved in caregiving, the more likely they were to report health problems (Snyder & Keefer, 1985). Health promoting behaviors may postpone the development of a number of physical and psychological health problems for which this population is at risk (Strang & Neufeld, 1990). Thus, the length of caregiving as a marker of stress (Pearlin, et. al (1990), is an important variable to examine, because it presumably affects the perceived health status of caregivers as posited in this study.

It stands to reason that the length of caregiving to impaired elders would also affect caregiver perceived

health status and behaviors. A number of researchers have conceptualized stress in relation to caregiving responsibilities (Zarit, Orr & Zarit, 1985; Riffle (1989; Baldwin, Kleeman, Stevens & Rasin, 1989; Kiecolt-Glaser, Glaser, Shuttleworth, Dyer, Ogrocki & Speicher, 1987). For example, the burden interview was developed to evaluate the subjective impact of caregiving (Zarit, Orr & Zarit, 1985). However, Pearlin, et. al (1990) developed a caregiver stress paradigm that includes duration of caregiving as "a marker of the chronicity of the stressors that the caregiver experiences" (p. 586). Based on this paradigm, the length of caregiving was the measure of stress used for this study.

Because caregiving can be both physically and psychologically taxing, concern for the health of the caregiver is warranted (Killeen, 1989). Caregivers who have caregiving responsibilities superimposed upon daily routines may believe they have neither the energy nor the time to engage in health-promoting practices. Therefore, health promotion efforts of caregivers that achieve prevention of breakdown, maintenance of caregivers' personal health, and the continuation of their ability to care for their impaired elder (Strang & Neufeld, 1990) become a high priority in long term care.

Significance of the Study to Nursing

Caregiver health is a concern for nursing, particularly with the projected increase in numbers of older adults who will need care. A critical dimension of nursing's role is assisting caregivers in moving toward their maximum health potential, regardless of their caregiving demands. Therefore, the efforts of nursing should be directed toward preventing a decline in the caregiver's health, and the development of a second patient who will need a caregiver (Gaynor, 1990). Further, an assessment of lifestyle behaviors can help nurses identify those behaviors that are beneficial, and those that pose a threat to caregiver health.

Riffle (1989) also makes the assumption that the caregiver should be a recipient of nursing care, and as a recipient of preventive/promotive health care, the caregiver is a legitimate concern for nursing. Thus, caring for the caregiver, that is, assisting informal caregivers to implement health promoting behaviors, as well as to enhance their level of wellness, is a legitimate interest for the discipline of nursing.

Theoretical Foundations for the Study

Several models were examined for their usefulness in studying caregiver populations, including Lazarus and Folkman's (1984) stress and coping in physical and mental

health, as well as specific caregiver mental health and stress models (Given, Collins & Given, 1988; Kahana & Young, 1990; Pearlin, Mullan, Semple & Skaff, 1990). In addition, a number of models related to health belief and/or health seeking behavior were examined (Rosenstock, 1974; Schlotfeldt, 1975, 1986, 1987), as well as self-care deficit theory (Orem, 1985). However, Pearlin's, et. al (1990) paradigm of caregiver stress, and Pender's health promotion model were selected for use in this investigation because the conceptualizations seemed to have the most relevance for the caregiver population under study, as evidenced in the discussion that follows.

Pearlin's Paradigm of Caregiver Stress

According to Pearlin, et. al (1990), informal caregiving simply refers to activities and experiences involved in providing help and assistance to relatives or friends who are unable to provide for themselves. These researchers further point out that impairment leads to increasing dependency on others for the satisfaction of basic needs. Pearlin, et. al (1990) argued that caregiving is the behavioral expression of one's commitment to caring, which occurs in primary relationships. As such, caregiving is viewed, not as a role per se, but is embedded in ordinary relationships.

Caregiving refers to particular kinds of actions found in the context of established roles, such as spouse, parent-child, and so forth. However, a profound restructuring of established relationships may expand caregiving to the point wherein the actual caregiving experience virtually occupies the entirety of the relationship (Pearlin, et. al 1990). The paradigm consists of four domains: (1) the background and context of stress; (2) the stressors; (3) the mediators of stress; and (3) the outcomes or manifestations of stress. The paradigm is relevant to investigators interested in the caregiving process. George (1990) contends that researchers will profit from Pender's, et. al (1990) contributions to knowledge of the stress process as more broadly defined. Issues underscored in the model also include the interpersonal context within which self-esteem unfolds and is sustained or threatened, the links between social roles and personal well-being, as well as the benefits and limits of social support in coping with stress (George, 1990).

Several assumptions of Pearlin's, et. al (1990) paradigm were embodied in the conceptualizations underpinning this study, particularly those related to caregiver characteristics of ascribed status. Pearlin, et. al (1990) argued for inclusion of the effects of ascribed status, such as age, gender, and ethnicity, along with

educational, occupational, and economic attainments to be threaded throughout the research process in order to enhance understanding of caregivers' experiences with such issues as unequal distributions of rewards, privileges, opportunities, and responsibilities. In this study the effect of age, gender, race, and length of caregiving were examined as Pearlin, et. al (1990) suggested, rather than used only as statistical controls while examining relationships among other conditions, as is frequently found in the literature. Thus, caregiver attributes or ascribed statuses are an integral part of the conceptual model that was examined.

Therefore, from the caregiver stress paradigm (Pearlin, et. al 1990), only two concepts ["SES Characteristics" and "Caregiving History"] were used in this study. These two conceptual components are found in the "background and context" domain of the model, and were operationalized in this study as the ascribed statuses of age, gender, race, and length of caregiving. The remaining three domains classified as (1) the stressors, (2) the mediators of stress, and (3) the outcomes or manifestations of stress (Pearlin, et. al 1990) were not used in the study.

Pender's Health Promotion Model

Many studies have used a prevention-oriented model, with fear arousal consequent to the threat of disease as the primary motivation for health behavior (Rosenstock, 1974). In contrast, health promotion lifestyles focus on a wellness-oriented framework in which self-actualization and personal fulfillment for individuals becomes the primary attainable goal (Pender, 1982). In actuality, the health promotion model provides a paradigm for explaining two complementary aspects of a healthy life-styles which may have different underlying motivation: health protection or prevention with avoidance of illness or injury as the incentive for action, and health promotion with the desire for exuberant well-being (Pender, Walker, Sechrist, & Frank-Stromborg; 1990).

Although it has been argued that some structural similarities exist between the Health Belief Model (Maiman & Becker, 1974; Rosenstock, 1974) and the Health Promotion Model (Pender, 1987), the former focuses on disease prevention. The first component of Pender's (1982) model focuses on health protection or prevention with avoidance of illness or injury as the incentive for action. Here, health-protecting behavior is directed toward decreasing the individual's probability of encountering illness. The second component of Pender's (1982) model focuses on health

promotion without threat of disease identified as a behavioral determinant. Here, health-promoting behavior is directed toward sustaining or increasing the individual's level of well-being, self-actualization, and personal fulfillment (Pender, 1982).

Pender's (1982, 1987) model of health promotion provides a foundation for explaining health protection or preventive and health promotion practices of diverse groups. The primary rationale for selection of this model as a guiding framework is that Pender (1982, 1987) provides nurses with a conceptual basis for understanding the many factors that affect the health behavior of individuals and families. Pender (1987) argued that the potential for improving health status through health protective and health promotive practices throughout the life span can be demonstrated as exuberant physical, mental, social, and spiritual well-being.

Motivation is an important factor in initiating and sustaining health promoting and health protecting behaviors (Pender, 1987). Additionally, actualizing and stabilizing tendencies as a motivational basis for health behavior have also been identified by Pender (1987). The actualizing tendency is concerned with increasing states of positive tension in order to promote change, growth, and maturity and is suggested as the driving force toward increased

levels of well being (Pender, 1987). The stabilizing tendency is aimed at maintaining balance and equilibrium between the internal and external environment within a range compatible with continued existence (Pender, 1987). The caregiver may be motivated by both the actualizing tendency and the stabilizing tendency, while striving to obtain positive caregiver outcomes. Pender's description of health promotion and health protecting behaviors, as well as the actualizing and stabilizing tendencies, provide a conceptual basis from which nurses can understand the caregiver's desire to participate in health protecting/health promoting behaviors.

Health is a dynamic process inherent in the life experience of individuals, families and communities. The following definition of health, incorporating both actualizing and stabilizing tendencies, has been proposed by Pender (1987):

> Health is the actualization of inherent and acquired human potential through goal directed behavior, competent self-care, and satisfying relationships with others while adjustments are made as needed to maintain structural integrity and harmony with the environment (p. 27).

To address the promotion of health, one must know what the desired outcomes--health--is and how its achievement will be measured.

Pender's model of health promotion provides a foundation for understanding behaviors directed toward sustaining or increasing the individual's level of well-being, self-actualization, and personal fulfillment from a nursing perspective. Since Pender's focus on a Eudaimonistic model of health provides a framework for examining extremes in health (exuberant well-being) and extremes in illness (languishing debility), the model can be considered as providing a strong conceptual basis for the study of health promotion by nurses.

Additionally, the model embraces two priorities that have particular relevance to nursing knowledge development. That is, the model encompasses health promotion of socio-cultural groups across the life span (from infancy to older adult years), as well as the holistic study of human beings in relation to their families and lifestyles. Prevention and health promotion is placed in a holistic context that takes into consideration not only individuals, but the social supports and environments in which these individuals live. Thus, the model can potentially explain and predict patterns of health behavior in caregivers from diverse groups. This is especially important since health promotion practices of older adults, particularly the caregiver, may preclude the development of a number of physical and psychological problems for which this

population is at great risk. Although Pender (1982, 1987) does not address caregivers, per se, she does suggest that many new practice opportunities in traditional and non-traditional settings are becoming available to creative and innovative professional nurses.

For purposes of this research, Pender's (1987) theoretical model, in part, was considered to guide the conceptualizations and the analyses of the study. Because Pender's (1987) health promotion model is complex, select variables are included in the basic conceptual model for this research, to provide for more manageable use of Pender's model. In part, the conceptual model representing this study is derived from Pender's (1982, 1987) model. Of the seven cognitive-perceptual factors in Pender's (1987) model, only perceived health status was used in this research.

Conceptual Model Selected for the Study

The conceptual framework for this study is derived from the two theoretical models (Pearlin, et. al 1991, Pender, 1987) from which nursing knowledge of caregiver health may be developed. Pearlin's, et al. (1990) model provides a paradigm for examining the components of stress, including length of caregiving as a marker of stress affecting caregivers' health. Pender's (1982, 1987) model identifies a number of cognitive and perceptual

characteristics as primary motivational mechanisms that may have a direct influence on health promoting behaviors, and environmental and experiential characteristics as modifying factors that may indirectly influence health behaviors (Pender, 1987).

While the model of Pearlin, et. al (1990) provides a strong emphasis on primary stressors, secondary role strains, and secondary intrapsychic strains, the focus of this study is on positive health behaviors that facilitate the caregivers' continued ability to care for an impaired elder. Pender's (1987) model of health promotion is complex, making it difficult to tease out the unique contribution of many conceptually overlapping and indistinguishable variables. Neither model was believed to be satisfactory for the propcsed study, primarily due to their complexity in distinguishing among a myriad of interconnected variable relationships. Therefore, because very little is known about health behaviors in caregivers, the conceptual model examined the impact of one cognitive perceptual factor, perceived health status, and its effect on health behaviors of 'Black' and 'White' caregivers.

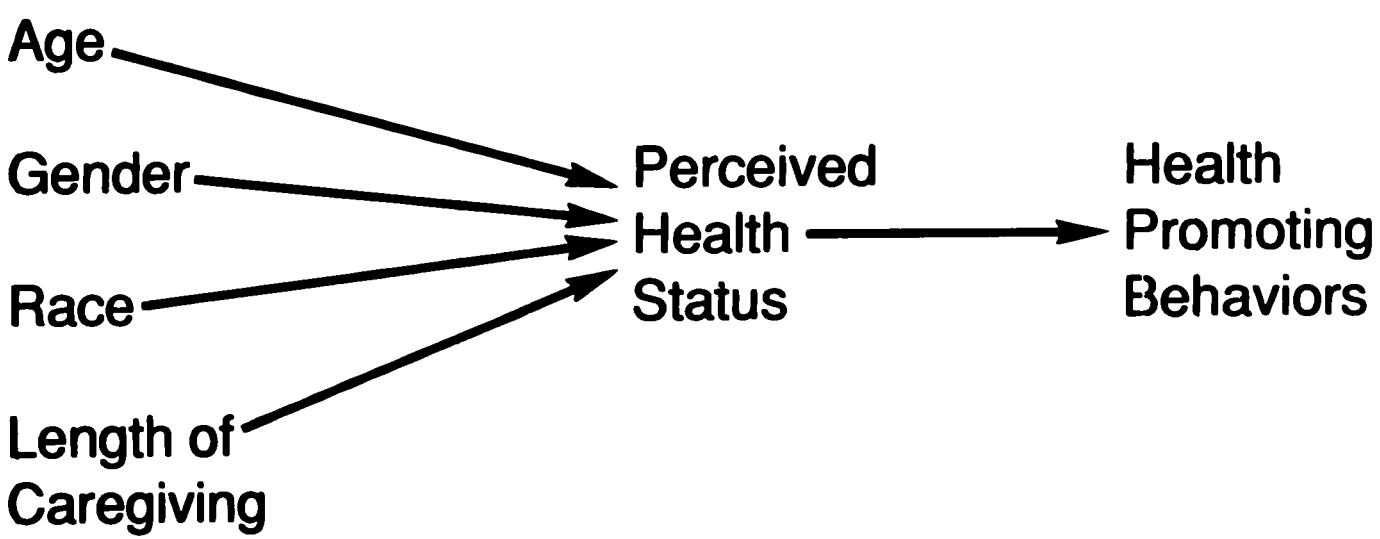
The conceptual model examined perceived health status and health promotion, with empirical consideration given to age, gender, racial differences, and length of caregiving in Black and White caregivers of impaired elders. The

specific variables to be studied are: (1) Age, (2) Gender, (3) Race, (4) Length of Caregiving, (5) Perceived Health Status, and (6) Health Promotion Behaviors. A diagram of the proposed conceptual framework is provided (see Figure 1).

Age, gender, race, and length of caregiving are believed to be related to perceived health status in caregivers. In addition to age, gender differences, race, and length of caregiving (as a marker for stress), the influence of perceived health status on health promoting behaviors of caregivers has not been studied in the two racial groups. Because individuals of various cultural backgrounds may differ in terms of group norms and behavior (Rosen, 1988), it is necessary to examine similarities and differences in health practices and individual lifestyles within and across cultural groups.

In this study's model, the effect of age, gender, race, and length of caregiving were examined as Pearlin, et al. (1990) suggested, rather than used only as statistical controls while examining relationships among other conditions. The conceptual model for the study also established the link between perceived health status and health promoting behaviors in caregivers of impaired elders, as posited in Pender's (1987) health promotion model. This conceptual model provided a scientific

Figure 1: Conceptual Model Linking Perceived Health Status and Health Promoting Behaviors in Caregivers



knowledge base for practice that comes from research that seeks to understand those individual factors that facilitate or impede effective health-related lifestyles.

Definition of Terms

The following conceptual and operational definitions relative to this study are provided:

Caregiving.

Conceptual: Caregiving is the behavioral expression of one's commitment to caring, which occurs in primary relationships (Pearlin, et. al 1990).

Operational: An English-speaking relative or friend who provides help or assistance at least five hours per week to an impaired elder, 60 years or older living in the community.

Health promotion behaviors.

Conceptual: Those behaviors aimed at increasing the level of well being and actualizing the health potential of individuals (Pender, 1982; 1987).

Operational: Includes one open-ended question allowing caregivers to state what they do to promote health. In addition, caregivers' responses to a seven-item Health Behavior questionnaire are scored dichotomously--one point for each healthy behavior:

(1) Usual hours of sleep each night?

(2) Frequency of eating breakfast?

(3) Frequency of eating between regular meals?

(4) Number of alcoholic drinks at one sitting?

(5) Smoking cigarettes at the present time?

(6) Frequency of engaging in active sports, swimming, taking long walks, gardening, or doing physical exercises?

(7) Has caregiver been told he/she is overweight?

Perceived health status.

Conceptual: Perceived health status is a cognitive-perceptual factor identified within the model as a primary motivational mechanism for acquisition and maintenance of health promoting behaviors (Pender, 1987).

Operational: A single item indicator is used as a global measure of perceptions of one's own health in the past month, with higher ratings indicating better health. Four option responses were possible: "In the past month, has your health been (4) excellent; (3) good; (2) fair; or (1) poor?" measured on a continuum.

Age.

Conceptual: Age is the chronological age of the caregiver.

Operational: Age is measured as a continuous variable based the caregivers' reported date of birth for regression analysis. Age groupings [young (15-44); middle-age (45-64)

young-old (65-74); and old-old (75 and over)] are based on the national profile (Stone, Cafferata & Sangl, 1987).

Gender.

Conceptual: The sex of the caregiver is either male or female.

Operational: The variable is measured by the interviewers' observation.

Race.

Conceptual: Race is based on governmental classification of groups in the United States (Gaines, 1994).

Operational: In this study, caregivers were categorized simply as 'Black' or 'White', concluded on the basis of the interviewers' observations.

Length of Caregiving.

Conceptual: The length of time involved in the caregiving role is presumed to be a marker of stress affecting caregivers' health status (Pearlin, et. al (1990).

Operational: Number of months/years since the start of helping the impaired elder on a regular basis, five or more hours per week.

Purpose of the Study

The purpose of this study was to examine a conceptual model that compared Black and White caregivers by exploring

the effect of age, gender, race, and length of caregiving on perceived health status and health promoting behaviors of these two racial groups. The study was based on a secondary analysis of data collected in an original research project titled: "Black vs White Caregivers: Informal/Formal Service Use".

Jacobson, Hamilton, and Galloway (1993) make a cogent argument for using secondary analysis of existing data as a method of research, in light of more stringent standards for quality in research and competition for scarce funds. In Chapter 3 and Chapter 4, Jacobson's, et. al (1993) six criteria for evaluating potential data sets for secondary analysis in nursing research will be fully addressed.

The economic advantages (time and efficiency alone) outweigh any drawbacks in secondary analysis, to say nothing of the benefits of collaborative nursing research. In the case of this study, an existing data base provided a much larger random sample than would be possible with only investigator support. Several critical considerations were weighed before making an informed decision to use the data, not the least of which was determining the validity of the data.

Other essential considerations included awareness of the mismatch between frameworks, and inconsistencies in definitions, ascertaining whether the measures being used

actually assessed the phenomenon that the theory and research questions imply in the secondary analysis. One crucial threat to internal validity of a study in general, and to secondary analysis in particular, pertains to the adequacy of fit between the variables and the construct. Omission of needed data, adequacy of methods to collect the original data and sampling, and possible data analysis procedures are also essential considerations.

The conceptual model of the original study is found in Appendix A. The design reflects a model for addressing service use which focuses on caregiver assets, obligations, and attitudes. The research will answer questions on variations by race in assets, obligations, and attitudes that are associated with decisions to provide formal and informal care for impaired elders.

The results of this research will lead to increased nursing knowledge development in relation to differences and similarities of perceived health status and health practices of Black and White caregivers. The questions guiding the study are:

Research Question 1: Is there a difference in perceived health status of Black and White caregivers of impaired elders?

Research Question 2: Is there a difference in health promoting behaviors in Black and White caregivers of impaired elders?

Research Question 3: What do Black and White caregivers report that they do to stay healthy?

Research Question 4: What is the effect of age, gender, race, and length of caregiving on perceived health status and, in turn, what is the effect of perceived health status on health promotion behaviors of Black and White caregivers of impaired elders?

Summary

In summary, the encouragement and facilitation of healthy life styles is an area of nursing practice that is rapidly expanding. It holds great promise for reducing the likelihood of premature death and enhancing the quality of life for people of all ages (Walker, Volkan, Sechrist & Pender, 1988), particularly for caregivers. Studies examining factors that affect lifestyle health practices of caregivers can serve to increase nurses' awareness of health behaviors that are beneficial, while also identifying those that pose a threat to health. Gaining an understanding of ways to modify health behaviors of caregivers can ultimately result in enhanced functioning and prevent decline in caregivers' health.

Research must be grounded in theory if nursing is to contribute to knowledge development. The following chapter will critique and synthesize theoretical and empirical ideas in the literature on perceived health status and health promoting behaviors of caregivers. This synthesis will identify gaps in nursing knowledge development which need further investigation in relation to the conceptual model, and the research questions guiding the study.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction.

Chapter 2 examines the literature with respect to the study variables of perceived health status and health promoting behaviors in caregivers. Additionally, literature is presented that supports the linkages of age, gender, race, and length of caregiving, in the conceptual model that underpins the study. The primary purpose of this review is to identify gaps in nursing knowledge development related to those factors that influence health promoting behaviors in Black and White caregivers that need further investigation.

Caregiving of elders is recognized as normative but stressful (Brody, 1985). While some caregivers negotiate their caregiving responsibilities without undue strain and experience personal growth during the process (Ebersole & Hess, 1990; Brody, 1985), the converse is true for the majority of caregivers (Pruchno and Potashnik, 1989). Haley, Levine, Brown, Berry, and Hughes (1987) also found that 44 caregivers reported significantly more depression, lower life satisfaction, more chronic health problems, more use of prescription medications, and more recent physician visits than did 44 matched controls. Indeed, numerous studies reveal that caregivers are at high risk for

developing a number of physical and psychological problems (Deimling & Bass, 1986; Drinka, Smith & Drinka, 1987; Ebersole & Hess, 1990; George & Gwyther, 1986; Given, Collins & Given, 1988; Haley, et al. 1987).

Caregiving can be so overwhelming that caregivers suffer many emotional and physical problems, including insufficient rest, interrupted sleep, chronic fatigue and depression, many of which are present on a daily basis. With the exception of two studies (Killeen, 1989; O'Brien, 1993), caregivers' health practices have not been examined in a systematic way. These two studies will be examined in depth because they do address two very important issues in this study--caregivers and health promotion.

Health Promoting Behaviors of Caregivers

Killeen (1989) was the only researcher found in the literature that investigated health promoting practices of caregivers similar to this study. She examined health promotion in 120 family caregivers of frail elders. The 24-item Personal Lifestyle Questionnaire (PLQ) was the measure of health promotion in her study. Cronbach's alpha used as a measure of reliability was 0.83. Also, the Current Health Scale (CHS) was used to measure caregivers' own health perceptions. This scale contains nine standardized items structured as statements of opinion in regard to current health. Participants record their

responses to each statement on a five-point Likert scale (one = definitely false, and five = definitely true). The summary score represents how participants view their health, with a higher score indicating a healthier state.

Killeen (1989) observed a positive significant relationship ($r = .29$, $p < .01$) between caregivers' perception of their current health and health promotion activities. While she conducted two step-wise regression analyses, she did not enter these two variables in a regression to determine how much variance is explained in health promoting behavior by perceived current health status as this study proposed.

Nevertheless, the significant correlation obtained in Killeen's (1989) study between individuals' perceptions of their health status and the degree to which they engage in health promoting practices lends support to Pender's (1987) notion that there is a relationship between these two variables. It also supports the link between perceived health status and health promoting practices in the conceptual model posited in this study.

Caregivers who were older, and had been providing care longer, reported greater participation in health promotion activities. Older caregivers were less likely to work outside the home, and also less likely to still have child care responsibilities, thus increasing the time available

to attend to caregiving responsibilities and personal needs. This increased participation in health behaviors may be reflective of fewer concurrent role demands and having achieved a workable schedule that permits both time for caregiving tasks and personal needs.

The caregivers in Killeen's (1989) study were most often women (79 percent) in their late forties who were married, had one or more children living at home, and were active in the work force. But, these younger caregivers, who were most often daughters, were less likely to participate in health promotion activities. When Killeen (1989) asked a subsample [every fifth caregiver of 120 subjects] what they did and did not do for their own health, half of the women (ages ranging from 27 to 93 years) interviewed responded by saying they did not have time to be "worried" about their own health and were unable to specify any particular activities that they did to maintain or promote their health.

Killeen (1989) believed these findings to be reflective of women deferring personal needs to focus instead on extrapersonal demands of caregiving, home, and family. She further contended that daughters have greater role demands while participating less in activities that promote health, placing them at greater risk for illness.

Thus, gender emerged as a significant variable in Killeen's (1989) study.

Killeen (1989) found no significant relationship between length of time in the caregiver role and perception of current health in her study. These data suggest that the length of time spent as a caregiver may not have a cumulative negative influence on perceptions of health.

The majority of subjects, however, were White (85 percent), and comparisons were not made between Black and White subjects. Additionally, subjects in Killeen's study [recruited from public and private agency rosters of home health services, caregiver support groups, county health department services, and adult day care centers] constituted a convenience sample, unlike the current study.

O'Brien (1993) examined the health promoting behaviors of 20 spousal caregivers of individuals with multiple sclerosis in a pilot study, using the 48-item Health Promoting Lifestyles Profile. She found that husband caregivers reported fewer health-promoting behaviors than did their wife counterparts. Husband caregivers, who were older (mean = 57 years, sd = 6.27 versus mean = 47 years, sd = 9.65), had been providing care longer than wife caregivers, (mean = 11 years, sd = 9.05 versus mean = 3.55 years, sd = 1.94), respectively. Length of caregiving, however, was not correlated with any other study variables.

These findings must be viewed with caution because of the small, self-selected convenience sample (N = 20), drawn from a geographically restricted area representing middle-aged caregivers, actively engaged in the National Multiple Sclerosis Society in the Northeastern United States.

O'Brien's (1993) study revealed that caregiving wives reported higher total frequency of health behaviors than did their husband counterparts. The impact of caregiving was greater for the husbands ($r = -.54$, $p < .04$) than for wife caregivers ($r = -.03$, not significant) as demonstrated when husband and wife caregivers are examined separately. Two reasons may account for the findings in this pilot study. The majority of the husband caregivers (82 percent) in this study were employed outside the home on a full-time basis, whereas only 33 percent of the wives were in the work force.

Given the fact that female care recipients had greater dependency needs, and the majority of husband caregivers (82 percent) were employed outside the home on a full-time basis, O'Brien (1993) believed the sheer magnitude of the workload, in addition to other time commitments, may be a major contributing factor to decreased health promoting behavior in caregiving husbands. Perhaps caregivers who have increased or competing demands participate less in health promoting behaviors.

Although the two studies provided by Killeen (1989) and O'Brien (1993) are important efforts that address the issue of caregiver health promotion, the nature of the impairment and the care recipients' age differ. Further, race was not a focus in either study, and findings are mixed. Older caregivers were more likely to engage in health behaviors (Killeen, 1989), whereas the younger, less frequently employed wives were more likely to engage in health behaviors in the O'Brien (1993) study. Clearly, more studies are needed to gain information about patterns of health behaviors in caregivers, and in particular, caregivers in ethnically diverse groups.

The Relationship of Perceived Health Status and Health Promoting Behaviors in the General Population

Foster (1992) examined health promotion and life satisfaction in 100 elderly Black adults using a correlational-descriptive design, and found a nonsignificant relationship between health-promoting activities and perceived current health status. Foster (1992) had expected perceived current health status to be significantly correlated with the composite of health-promoting behaviors, but conjectured that culture, the nonrandomness of the sample, and/or the modest sample size were competing explanations that may have affected this

outcome. While these older adults were Blacks, they were not caregivers as in the current study.

Millon-Underwood and Sanders (1990) studied health promotion behaviors in a convenience sample of 177 Black men; however, their study did not address caregivers. Using a health belief framework, the study examined cancer-related knowledge, attitudes, and perceptions of a select group of African-American men, with a mean age of 23.45 (sd = 9.13) and a range from 18 to 47 years, to evaluate their influence on health promotion behaviors (Millon-Underwood & Sanders, 1990). Significant relationships were observed between the variables of knowledge of early warning signs of cancer (Beta = -1.42), attitudes related to screening procedures (Beta = 0.11), perceptions of seriousness of cancer (Beta = -1.22), and cancer risk reduction and early detection health promotion behaviors (Beta = 0.22). In addition, stepwise regression analysis revealed that attitude related to the efficacy of cancer screening predicted 34 percent of the variance of health promoting behaviors in this sample of Black men (Millon-Underwood & Sanders, 1990).

Although Millon-Underwood and Sanders (1990) examined health promotion in Black men, their study is based on the health belief model (Maiman & Becker, 1974; Rosenstock, 1974). This model is heavily influenced by a disease

orientation, with fear arousal consequent to the threat of disease as the primary motivation for health behavior. In contrast, the present research has posited a different underlying motivation for participating in health promotion stemming from the cognitive-perceptual factor, perceived health status, emphasizing the importance of cognitive mediating processes in the regulation of behavior (Kaplan and Cowles, 1972). Improved health status can then be used to reinforce the value of good health and promote more extensive changes in lifestyle.

Two other studies found a significant relationship in perceived health status and health promoting behaviors. Frank-Stromborg, Pender, Walker, and Sechrist (1990) studied 385 ambulatory cancer patients undergoing treatment in 13 clinical sites in the midwestern United States. The primary aim of the study was to determine the extent to which cognitive/perceptual and modifying variables explained the occurrence of health promoting behaviors in adults with cancer. Multiple regression analyses revealed that 23.5% of the variance in health promoting lifestyles was explained by the cognitive/perceptual variables definition of health, perceived health status, and perceived control of health, as well as the modifying variables including age. The health self-rating score made a significant independent contribution in explaining the

variance of health-promoting lifestyle profile scores of these subjects. However, no mention was made of the specific measure employed for "health self-rating", nor was the racial composition of the sample provided.

Weitzel (1989) studied health promotion in 179 blue-collar workers. Contrary to the study conducted by Frank-Stromborg, Pender, Walker, and Sechrist (1990), this researcher provided the racial mix of subjects. The majority were White (51%); the remainder were Hispanic (27%); Black (20%) or other ethnic groups (2%). The measure for health status was the four-item "Health Scale", a subscale of the self-report Multilevel Assessment Instrument (Lawton, Moss, Fulcomer & Kleban, 1982), with subjects rating the quality of their health. Total scores ranged from four to 13 with higher scores indicating better health. All six subscales were used in the 48-item Health Promotion Lifestyle Profile (HPLP). A few minor word substitutions were made in four of the instruments to ensure ease of reading for the subjects. Health status and self-efficacy, singly or in combination, accounted for the most variance in health promoting behaviors compared with the other two psychological variables--importance of health, and locus of control. Together, they explained 19 percent and 15 percent of the variance, respectively, for self-actualization and the total HPLP measure. In

addition, health status explained 10% of the variance for exercise, as did self-efficacy for interpersonal support.

Although approximately 700 nonprofessional employees were invited to participate as subjects for the study, only 40 percent volunteered. Completed questionnaires were obtained from 179 subjects. Blood pressure screenings and health promotion literature were used as incentives. Although detailed procedures were provided for the recruiting protocol, no mention was made about the characteristics of the 60% nonrespondents contributing to selection bias. While a significant relationship was found in perceived health status and health promoting behaviors in the study, the low response rate remains problematic.

STUDY VARIABLES LINKED TO PERCEIVED HEALTH STATUS

The Relationship of Caregiver Age to Perceived Health Status

It has been shown in a number of studies that older adults do incorporate health-oriented behaviors in their lifestyles, and further that the prevalence of desirable health practices does appear to increase with age (Belloc & Breslow, 1972; Harris & Guten, 1979; Brown & McCreedy, 1986; Brody, 1985; Maloney, Fallon & Wittenberg, 1984). All of these studies, however, were based on the general population, where the relationship between age and health behaviors was the focus, rather than age and perceived

health status of caregivers as this study examined. Because age and health promoting behaviors was not a proposed relationship in the present research, these studies were not useful in supporting the proposed linkages.

In a study examining age, socioeconomic, and health status, House, Kessler, and Herzog (1990) studied 3,617 non-institutionalized persons 25 years of age or older, in a multistage, stratified area probability sample at the University of Michigan Survey Research Center. Blacks and persons aged 60 or over were sampled at twice the rate of non-Blacks and persons under age 60, respectively. In examining health status, House, Kessler, and Herzog (1990) found a prevalence of chronic conditions at age 35 to 44, which peaked at ages 55 to 64 for the lowest socioeconomic stratum in their sample. Chronic conditions, however, were not seen in the highest stratum until after age 75. The mean number of chronic conditions remained below 1.0 until age 75 in the highest socioeconomic group. In contrast, the mean number of chronic conditions in the lowest socioeconomic group rises sharply between ages 25 and 54 and exceeds 2.0 by age 55.

House, et. al (1990) found significant relationships for age and chronic conditions (R-square = .253, $p < .001$), age and functional status index (R-square = .146, $p <$

.001), and age and limitations (R-square = .138, $p < .001$). Although, the effects obtained were significant for the three self-report health measures, they seem quite weak and not compelling. In addition, the measures used are not commensurate with a global measure of perceived health status as the present study conceptualizes. Rather, the measures seemed more consistent with chronic illness and/or functional status than perceived health status.

Pruchno and Potashnik (1989) examined self-reported physical and mental health of 315 persons caring for a spouse who had been diagnosed with Alzheimer's disease or a related disorder. These results were compared with general population norms for existing data bases. These researchers compared caregivers' ratings of their own health status with responses made by the general population matched for age and gender. Percentages of general population and caregivers at various levels of self-assessed health by age and gender were reported. Chi-square analyses which compared male and female caregivers' ratings of their own health indicated that there were no differences (Chi-square = 3.50, NS).

Pruchno and Potashnik (1989) found that caregivers, regardless of age and gender, rated their own health as excellent less frequently than did the population. On the other hand, caregivers rated their own health as good more

often than does the population. Further, women caregivers older than age 65 were more likely to report their health as fair or poor than were older women living in the community. Measurement strategies, however, for physical health often seemed to include assessments of sickness rather than health. For example, caregivers were asked to report how many days during the past 12 months they had spent in a hospital, how many days they had been sick in bed all or most of the day, how many times they had seen any type of medical doctor, number of chronic illnesses that had been diagnosed by a physician during the past year (considered a more objective index of health), and the presence of symptoms. Therefore, results of the two studies cited here are conceptually and methodologically irreconcilable with health status in this study.

The Relationship of Caregiver Gender to Perceived Health Status

The most consistent finding in caregiving research is that the majority of informal caregivers are women (Stone, Cafferata & Sangl, 1987). In studying health promotion practices of caregivers, it is anticipated that the majority of subjects will be women, with a smaller proportion of men providing care to older adults. Women outnumber men in all caregiver categories: spouse caregivers are more frequently women caring for husbands,

more daughters than sons care for older parents, and more women than men assist in the care of other relatives and friends.

Montgomery and McGlinn-Datwyler (1990) argued the "gender effect" is most pronounced among those caring for older parents, in that more daughters than sons are involved in caregiving. Brody (1985) estimated that over 5 million adult children are involved in parent care at any one time. Stone, Cafferata and Sangl (1987) in one of the few studies using national data, discovered that women outnumbered men by more than three to one among adult children caregivers: 77 percent were daughters, only 23 percent were sons.

In a sample of 3,025 non-institutionalized adults, Johnson, Ratner, Bottorff, and Hayduk (1993) found that the combined effect of gender was a significant predictor of two dimensions of health promoting behavior: whether one accepts responsibility for one's own health, and the extent to which one has interpersonal support. However, the significant effects uncovered were direct effects. That is, they were not mediated by the cognitive-perceptual factors (perceived control of health, perceived self-efficacy, and perceived health status). Further, no statistical difference in the effect of gender and

perceived health status was found (r = -.013, not significant).

Ratner, Bottorff, Johnson, and Hayduk (1994) suspected an interaction effect of gender within the health promotion model in their earlier work cited above (Johnson, et. al (1993). Employing the same data set of 3,025 noninstitutionalized adults, a "stacked" analysis [that is allowing for the modeling of two or more groups simultaneously] was done in LISREL. In this way, the significance of specific interactions effects of gender could be tested. In particular, they hypothesized that there would be sex differences in the effects of marital status on perceived control of health, perceived self-efficacy, perceived health status, self-actualization, nutrition, and interpersonal support. The estimated coefficients were based on five of the six dimensions in the Health Promoting Lifestyle Profile.

Although, the final model resulted in a Chi-square = 134.16, df = 117, p = .133 (GFI = .990), Ratner, et. al (1994) did find support for the conclusion that causal mechanisms underlying health promotion behavior are somewhat different for men and women. Once gender was removed as a predictor variable--a necessary consequence of creating a model stacked by sex--the remaining variables (the modifying factors and cognitive-perceptual factors)

explain little of the variance in health responsibility (2.7% for men and 2.4% for women). Even with a sophisticated analysis, differences were modest; further this sample came from the general population. The present study has examined combined effects of gender in a sample of caregivers from two racial groups.

Earlier studies have shown that women tend to report lower perceived health status ratings than do men (Waldron, 1983; Groves, Fultz, & Martin, 1992). Groves, Fultz, and Martin (1992) reported on gender differences in health status ratings and found that 43 percent of the men rated their health as excellent compared to only 28 percent of the women. These gender differences remain even after controls are applied for differential health conditions.

It has been hypothesized that some of the differences might be attributable to women's inclusion of more psychological health criteria than men. Also, the meaning of the phrase "health status" might differ between the sexes. Groves, et al. (1992) further tested the hypothesis that controlling for the inferred meanings of the question ["Would you say your health, in general, is excellent, good, fair, or poor?"] would decrease the gender difference in health status ratings. Thus, it might be possible that women report a lower health status than men because they are more likely to use objective measures in judging their

health. However, controlling for the perceived meaning of the question did not eliminate the gender differences.

In the 1984 National Health Interview Survey (NHIS), female respondents were more than twice as likely as males to report functional limitations (28.5 percent versus 13.5 percent). This is consistent with the findings that women were more likely than men to have had one or more illnesses and to have more physician visits. Nathanson (1975) offered three categories of explanation for why women report more illness and limitations and use more medical services than do men: (1) it is culturally more acceptable for women to be ill; (2) women's social roles are more compatible with reports of illness and use of medical services than is the case for men; (3) women's social roles are, in fact, more stressful than those of men; consequently, they have more real illness and need more assistance and care. Kane and Kane (1981) suggested that the way respondents report on the individual items may be biased by variations in motivation, mood, and overall emotional health. These gender differences are related to health, and not perceived health status, of men and women in the general population.

Similar to the general population, however, a consistent finding in studies of caregivers to demented and frail elders has been greater negative impact on the

physical and emotional health of women versus men (George & Gwyther, 1986; Pruchno & Potashnik, 1989). Wives are about three times as likely to be caregivers than husbands (Stommel, Given & Given, 1990). These women often face competing demands between employment and caring for their own family, often with young or teen-aged children, as well as their dependent aged parents. Brody (1981) who aptly calls them "women in the middle" concludes that such role overload cannot persist without ill health consequences. Because research has routinely neglected examination of cultural diversity among caregivers, the current study has addressed the effect of gender differences on perceived health status in caregivers of two racial groups.

In a study of caregivers to posthospitalized patients who suffered myocardial infarctions, Young and Kahana (1989) found that spousal caregivers had poorer health at the inception of caregiving, but 38 percent of the daughters, 25 percent of wife caregivers, and only 10 percent of husband caregivers reported a decline in health as the result of caregiving. While evidence suggests greater negative health impact for women than men, Moritz, Kasl, and Ostfeld (1992) recently reported that, not female caregivers, but male caregivers of cognitively impaired wives had elevated systolic blood pressures and a perceived decrease in health status. Only two other studies have

documented greater negative health impact for male caregivers, each involving couples living with a cognitively impaired spouse (Eagles, Beattice, Blackwood, Restall & Ashcroft, 1987; Moritz, Kasl, Berkman, 1989). Examination of gender differences in perceived health status of caregivers in the two racial groups has virtually been ignored, yet evidence suggests that male caregivers who provide care to impaired elders may be equally at risk for health consequences.

The potentially conflicting values and multiple roles of the "women in the middle" have also been studied (Brody, 1985; McBride, 1981). Brody (1985) found that women provide more care and more difficult care to more parents over much longer periods of time. When faced with competing demands on their time, what these women gave up was their own free time and opportunities for socialization and recreation. These negative lifestyle changes and the knowledge of caregivers' neglect of their own health whenever caregiving demands increase (Connell & Schulenberg, 1990), reflect the tremendous responsibility nursing has to study health status in relation to health promotion of caregivers in our society.

Data from this random sample may help determine whether women, more so than men, relinquish specific activities that would benefit their health to serve as

caregivers, bearing a disproportionate amount of the responsibility for the care of older persons in our society. Evidence suggests that men are socialized to delegate many caregiving tasks, such as household tasks and hands-on care, to female family members or to purchase such services as necessary (Matthews & Rosner, 1988).

George (1991) reported on premature deaths as the ultimate consequence of caregiving. Over a one-year period, George (1991) reported a caregiver death rate of 9 percent, whereas for a comparable community sample, the rate was only 4.4 percent. Despite the female advantage in life expectancy, female caregivers were substantially more likely to die than males, even though the males were, on average, almost four years older. Again, this finding is congruent with the overall greater negative impact observed for female versus male caregivers, and suggests that female caregivers are more adversely affected by their role than are male caregivers. This pattern holds among caregivers of physically impaired, stroke, heart disease, and cancer patients (Biegel, Sales & Schulz, 1991; Tennstedt, Cafferata & Sullivan; 1992; Young & Kahana, 1989). Contrary to the argument posed by Ratner, Bottorff, Johnson, and Hayduk's (1994), gender differences are well-documented in the caregiving literature.

The Relationship of Race to Perceived Health Status

An understanding of the effects of 'race' on perceived health status is particularly important in light of espoused differences in the two racial groups. Blacks reported significantly poorer health than Whites (Mutchler & Burr, 1991; Robinson, 1989). Consistent with this finding, Blacks reported more visits to a health care professional during the year prior to interview, even after accounting for differences in economic factors (Mutchler & Burr, 1991). Previous work has used these categories (i.e., 'Black' and 'White') as behavior groups, which they are not.

Nevertheless, Mutchler and Burr's (1991) longitudinal study involved a national sample of 8,955 Whites and 848 (10.6%) Blacks, which is representative of the general population. These researchers concluded (as did Mechanic and Aiken, 1989) that other characteristics, such as lifestyle, health practices, diet, and stress associated with various forms of discrimination, [that are correlated with but distinct from socioeconomic status], may be reflected in the observed health differentials of Blacks and Whites. Their study is problematic because, while it addresses a comparison of Blacks and Whites, it does not address caregivers. Further, their argument is faulty in

suggesting health promoting behaviors influence health status of Blacks and Whites.

In examining racial differences in health and health care service utilization of Blacks and Whites, Mutchler and Burr (1991) made a compelling argument that socioeconomic status conditions underlie a substantial share of the health differential, seemingly encompassing multiple dimensions of lifestyle factors. Their longitudinal study involved a national sample of 8,955 Whites and 848 Blacks, representative of the general population. Even after accounting for differences in economic factors, other characteristics such as lifestyle, health practices, diet, and stress associated with various forms of discrimination, that are correlated with but distinct from socioeconomic status [as suggested by Mechanic and Aiken (1989)], may be reflected in the health differences observed in Mutchler and Burr's (1991) work.

One pilot study using an experimental design, tested an intervention and compared the health of 24 Black and 29 White caregivers of elderly persons with dementia. The study showed that caregivers in general did not take care of their own health and were reluctant to see themselves as needing help. The study also suggested that Black caregivers have poorer health, greater sickness, greater distress, and more depression than White caregivers (Wykle,

Taylor, Belgrave & Namazi, 1991). No statistical difference was found in self-assessed health in the subjects. However, this is one of a very few studies that lends support to the notion of reported differences in health in the two racial groups, and in particular, of a caregiver sample.

While there are a number of studies that include race, defining race and differentiating its effects from socioeconomic status has been an issue. The assumption that the "races" exist in nature as a fixed number of distinct biological populations with distinctive physical, mental and/or behavioral characteristics, is an extant view of human differences (Gaines, 1994).

Racial ideological classifications create divisions, while beliefs, values, and behavior unite people. Because racial classification is an impediment, rather than a facilitator of cultural comparisons (Gaines, 1994), these racial categories cannot inform us of culture or behavior, and thus cannot be used as predictors of action.

Although traditional research in this country has used color to identify race, e.g., 'Black' and 'White', Gaines (1994) argues that religion or a proxy of religion is a useful way to classify people because religion is based on beliefs, values and behavior. Churches are a source that affect human values and behaviors. Further, Gaines (1994)

argues that when ethnic identity blurs, religion stays in the family, even after the death of immigrant parents.

The basis of human differences is culture, not biology. The need to adapt and integrate wholly the manifest importance of cultural and social differences into theory and practice, while maintaining cultural integrity in the face of cultural diversity, remains an ideal of this study; as the racial categories were given.

The Relationship of Length of Caregiving and Perceived Health Status

Health status has been hypothesized to be affected by the length of time spent in caregiving. Some researchers have concluded that informal caregiving becomes more intense, and is associated with more stress over time. Indeed, it has been well documented that the health status of caregivers is affected by the stress of providing care to an older adult (Baldwin, Kleeman, Stevens, & Rasin, 1989; Gaynor, 1989; Pearlin, Mullan, Semple, & Skaff, 1990; Pruchno & Potashnik, 1989; Riffle, 1989; Wright, Clipp & George, 1991). However, in their review article on health consequences of caregiver stress, Wright, Clipp, and George (1993) stated that length of caregiving in most studies does not correlate, or only weakly correlates with negative health consequences.

Yet, Gaynor (1990) in a sample of 155 respondents [87 long-term caregivers, 38 short-term caregivers and 30 noncaregivers] found that caregiving wives of patients with physical and cognitive impairments who had been providing care for extended periods of time had more physical health problems than did those providing care for shorter durations. The long-term group averaged 7.5 years of caregiving experience, as compared to three years for the short-term group. Unlike this study, the research focused on caregiver health, not on perceived health status of the caregiver.

Gaynor (1990) further discovered that the long-term group had significantly more illness [arthritis and high blood pressure were most commonly reported] than did the short-term or control groups (mean = 1.89, Chi-square = 7.9, p = .01), but only among the women more than 54 years old. These findings suggested that older caregivers, providing care for longer periods may have more negative impact on their health status. This may be particularly true if length of time providing care is a marker of stress in the caregiving experience (Pearlin, et al. (1990).

Similarly, Snyder and Keefer (1984) examined the health and social needs of disabled, frail adults, primarily those with Alzheimer's disease, multiple sclerosis, and strokes. In addition to finding a

statistically significant relationship between the level of disability of the care recipient and the presence of caregiver health problems, Snyder and Keefer (1984) found, more importantly, the longer caregivers had been involved in caregiving, the more likely they would report health problems ($r=.13$, $p < .10$). Not only is this relationship weak, the relaxed alpha just reaches significance. Here again, the focus is the effect of length of caregiving on health problems, but not perceived health status, as proposed in this study.

Stone, Cafferata, and Sangl (1987) in their national profile of caregivers of the frail elderly found the duration of caregiving ranged from less than one year to 43 years. The majority of caregivers had been providing unpaid assistance for one to four years, although, one-fifth had been caring for the disabled person five years or more. While length of caregiving and perceived health status were measures in their study, the two variables were not linked as they are in this study. In the present study, length of caregiving was examined in relation to perceived health status of caregivers. There was also an attempt to determine if the duration of caregiving activities is a marker of the chronicity of the stressors that the caregiver experiences.

Health Promoting Behaviors Measures

O'Brien (1993) used the 48-item Health Promoting Lifestyle Profile (HPLP) as a measure to investigate patterns and determinants of health-promoting lifestyles of caregivers in her study. Both conceptual and methodological problems have been found with respect to the HPLP. For example, the development and initial psychometric properties of the instrument were reported by the authors (Walker, Sechrist & Pender, 1987). Factor analysis, based on responses of 952 adults, isolated six dimensions that accounted for 47.1% of the variance in the 48-item measure, with alpha reliability coefficients for the subscales ranging from .702 to .904. However, further scrutiny of the HPLP factor analysis revealed that many of the factors did not load strongly and cleanly in relation to health promoting behaviors. That is, 20 of the 48-items in the HPLP loaded on more than one factor, which calls into question the reliability of the six dimensions in the instrument.

Further, the use of Health Promoting Lifestyle Profile has been reported in two studies of Black elderly (Ferguson, 1993; Foster, 1992). Both researchers argue that the measure does not capture culturally unique health-promoting activities of older Blacks. Additionally, Foster (1992) conducted a pilot study to test the

comprehensibility of the language for older Black adults, and found that prompts had to be developed to explain certain words in the instruments to subjects completing the questionnaire. Foster (1992) did not state which instruments were problematic, although the Health Promoting Lifestyle Profile was one instrument used in her study.

Ferguson (personal communication, February 7, 1993) also reported very low reliability on this measure in her sample. Both of these studies examined older Blacks from the South; and, while the samples were adequate in size (60 or 100 subjects, respectively), they were not random, but rather convenience samples. Perhaps some modifications or adaptations could be made in terms of studying Blacks in various geographic locations in the United States with diverse educational backgrounds, or the use of open-ended questions to capture the essence of those culturally unique health promoting behaviors of Blacks in our society.

Qualitative material was elicited from subjects in the general population on health practices by several researchers. Harris & Guten (1979), in an effort to look beyond the practices recommended by health professionals, inquired about self-defined behaviors undertaken to protect, promote, or maintain health by a random sample of adults, 32% of whom were 55 or older. They identified five clusters within 30 reported behaviors in an exploratory

study: personal health practices, safety practices, preventive health care, environmental hazard avoidance, and harmful substance avoidance. While the subjects' ages seem comparable to those of caregivers, reported health behaviors may be different, particularly when investigating Black and White caregivers.

Brown & McCreedy (1986), in their sample of 386 non-institutionalized older people, employed an instrument listing 30 health-protective activities, similar to that used in the Harris and Guten (1979) study, to survey people aged 55 and over recruited through a senior center. These older adults reported performing a higher mean number of activities (17.2 versus 12) than were reported by the general adult sample in Harris and Guten's (1979) study. When asked what else beyond the 30 listed activities they did to protect their health, they cited a number of activities including: physical, mental, psychological, spiritual, social well-being, and a few activities involving contact with the health care system. Similarly, in this study, a variety of responses were elicited from caregivers to determine what they do to stay healthy.

Brody (1985) asked adults aged 62 years and over what they did to improve or maintain health, and found that 59 percent identified between two and six purposeful health promotion activities, while only 12 percent said that they

did nothing to promote their own health. The purposeful health promoting activities identified in this study included: exercise, diet, keeping busy, socializing, avoiding worry, and visiting health professionals, which may be similar to caregivers.

Maloney, Fallon, and Wittenberg, (1984) also asked older adults participating in focus groups to discuss how they maintained or improved their own health. Frequent responses included attention to: staying active and maintaining a positive outlook on life, exercise, nutrition, rest and relaxation, blood pressure monitoring and health checkups, and self-discipline to do things in moderation. Findings from the above four studies reveal more similarities than differences, suggesting adult subjects do participate in health promoting behaviors. A number of researchers have used the seven-item Index of Health Practices (Belloc & Breslow, 1972; Wiley & Camacho, 1980; Berkman, Breslow & Wingard, 1983; Branche & Jette, 1984; Breslow & Breslow, 1993). The Index was originally developed and used on the Human Population Laboratory (HPL) survey of Alameda County (Belloc & Breslow, 1972). The study involved 6,928 subjects derived from a 2-stage stratified systematic sample of all adults over the age of 20 [or those over 16 if they had ever been married] in 1965. The racial mix included those subjects [82 percent

White, 14 percent Black subjects, and four percent members from other races], who completed usable questionnaires.

Belloc and Breslow (1972) argued that "among other purposes, a general health index would be useful in estimating the effects of general styles of life, specific health habits and personal health care on health" (p. 409). The Index of Health Practices has frequently been linked with measures of health status. While several longitudinal studies have documented the use of the same probability sample over the past 30 years, often mortality from all causes (Berkman, et. al 1983) or disability (Breslow & Breslow, 1993) have been used as the major dependent variable.

A modified version of Belloc and Breslow's (1972) Index of Health Practices was used as a measure of health promoting behaviors of caregivers in this study. While no studies were found that reported use of Belloc and Breslow's (1972) Index of Health Practices in caregiver populations, this measure was selected because it was believed to adequately and efficiently capture those physical health behaviors relevant to caregivers. It has been argued in this study that the avoidance of some health practices (alcohol consumption, cigarette smoking, and being overweight) is related to fostering healthy

lifestyles that may allow caregiving for extended periods of time.

Additionally, an open-ended question was asked of each respondent with respect to what the caregiver does to stay healthy. The rationale for inclusion of this question is based on the finding of Groves, Fultz, and Martin (1992), which suggests that an open-ended question used as a follow-up gives useful information on the perceived meaning of a survey question. Thus, in addition to questions about regular meals, adequate sleep, physical activity, not eating between meals, avoidance of smoking, and abstinence to moderate drinking, each caregiver was asked to describe what, in general, she/he does to stay healthy.

Summary of Literature Review

Although caregivers' decline in their own physical and mental health has been well documented, only two studies have examined health promotion of caregivers (Killeen, 1989; O'Brien, 1993). However, these researchers did not explore the variables in the way this study proposed the relationships, nor did they investigate differences in Black and White subjects. Sample size was exceedingly small thereby affecting generalizability in O'Brien's (1993) study; also, unlike this study, the younger age of the impaired person, and the nature of their impairment differ. They were not frail elders.

Gaps have also been identified in knowledge with respect to caregivers' perceived health status. One of the most important problems noted was the difference in conceptual and operational definitions of perceived health status. Frequently, perceived health status was defined as number of chronic illnesses or doctor visits rather than an overall perception of health. Consequently, when links were established between the variables of perceived health status with age, gender, race, and length of caregiving, the relationships were often not measuring the same thing. It is important to note that the link between actual health and perceived health status has been addressed in the literature. In their investigation of health perceptions and survival, Idler and Kasl (1991) determined that global evaluations of health status predicted mortality. Multidimensional measures of perceived health status were used in all studies critiqued, rather than a global appraisal of one's own health status. This study demonstrated the use of a single-item indicator as a global assessment of caregivers' perception of their health status.

Age was correlated with functional status and/or health conditions, but not with caregivers' perceived health status. Gender differences of caregivers were much more frequently documented than racial differences, both in

terms of health status and health behaviors. Also, based on the results of several studies (Gaynor, 1990; Baldwin, Kleeman, Stevens, & Rasin, 1989), it seems that length of caregiving leads to negative health consequences, yet only weak effects were found in terms of length of caregiving and health status, or the relationship was not statistically significant.

Conceptual definitions of health promoting behaviors were less problematic than were definitions of perceived health status. While a number of studies used the Health Promoting Lifestyle Profile as a tool for health promoting behaviors, the measure was not used in this study based on several documented limitations.

A number of studies have established a positive, significant relationship between health promoting behaviors and health status using the Index of Health Practices (Belloc & Breslow, 1972; Branche & Jette, 1984; Wiley & Camacho, 1980). However, these studies are problematic in several primary ways. They were essentially based on non-caregiver populations. As alluded to above, they examine health status, which differs from perceived health status as conceptualized in this study. In addition, they frequently examine the effect of health practices on health status, which is affected by age, gender, race, and length of caregiving. This study posits a direct link between

perceived health status and health promoting behaviors. Age, gender, race, and length of caregiving summary of literature shows mixed results on the relationship of perceived health status to health promoting behaviors, underscoring the need for further investigation. A random sample of Black and White caregivers will address those factors believed to affect perceived health status and health promoting behaviors. Also, because differences in health status and health promoting behaviors of varying racial groups previously have not been the focus, this study will fill this gap in nursing knowledge development.

CHAPTER 3

METHODS

Design

This chapter presents the methods used to answer the research questions. The research design for this study is secondary analysis of an existing data set. Data for the study are taken from a four-year longitudinal study of formal/informal service use mix of caregivers of older adults. The first wave of the original study provides information obtained at a single point in time. The original data set was determined to be valid so that secondary analysis is possible.

Description of Original Data Set

The original data set comes from a four-year prospective longitudinal study funded by NINR Grant No. RO1 NR03381 that examines Black and White caregivers' informal and formal service use mix. The study was guided by a conceptual model that included variables influencing caregivers' service use, and is found in Appendix A. The original study was designed to assess caregivers' reports of service use by race, assets, obligations, and attitudes. Because service utilization directly affects health promoting behaviors of caregivers, it is argued that the original conceptualization fits the present study.

Knowledge and use of services are assessed for each subject, including respite, meals on wheels, and support groups. Strategies for social support services that alleviate stress from the demands of informal caregivers reflect nursing's role in health promotion.

Subjects were screened through random digit dialing. Data were collected from a sample of northeast Ohio's Black and White caregivers who were subsequently interviewed face to face. Eligibility criteria included English-speaking caregivers who provided care or assistance for a minimum of five hours a week to an impaired elders 60 years of age or older, living in the community. The impaired elders experienced a broad range of physical and emotional problems. Their ADL scores ranged from 0-6, indicating the number of activities in which impaired elders required assistance. The mean ADL score for the sample was 2.24 (sd = 2.1).

The total sample consisted of 406 subjects. However, eleven subjects who were not designated as Black or White were eliminated from the sample. Therefore, the 395 caregivers [136 Black and 259 White] selected through random digit dialing represent 100 percent of the Black and White subjects, and are included in the analysis.

The use of a random digit dialing approach leads to a more representative sample of informal caregivers than many

other caregiving studies. The original conceptualizations fit the present study in terms of perceived health status and health promoting behaviors. Further, while service utilization is the dependent variable in the original study, caregiver health is a major focus in both studies.

The Health Promotion Behavior Questionnaire, the caregiver perceived health status, and the demographic profile instrument, (part of the original data set) were used for this research. Caregivers had no difficulty with the questionnaire.

Critique of the Original Data Set

Jacobson, Hamilton, and Galloway (1993) provide six essential criteria for evaluating potential data sets for secondary analysis in nursing research. These include (1) technical factors; (2) study variables; (3) data collection procedures; (4) documentation of data set; (5) age of the data; and (6) availability of contact person. The adequacy and integrity of the original data set has been determined and the data are valid as evidenced below.

In particular, scrutiny of the conceptual and operational definitions of study variables in the original data set was essential in determining the appropriateness of the data set to answer the research questions in this secondary analysis. Meticulous examination of the study design and data collection methods used by the primary

investigators was necessary. In addition, machine-readable minicomputer floppy discs were available in SPSS-PC for data analysis, in which data have been cleaned and verified through double-entry.

Additionally, the following details were attended to: definition of the target population and representativeness of the sample (i.e., sampling method), criteria applied for subject inclusion/exclusion, strategies to minimize selection bias, characteristics of respondents, nonrespondents, and dropouts, validity and reliability of instruments in the population from whom data were collected, qualifications and training of research team members, controls to minimize threats to internal validity, and procedures for handling missing data. Documentation that accompanied the data set included procedures used for coding missing data, frequency tables of the original study variables, and copies of the instruments used. A detailed description of the method, and a complete description of data editing and coding procedures along with error rates was included as well. The age of the data set was determined, and all data were collected by year's end 1994. Therefore, the first wave of data has been collected and was used for secondary analysis in the present study.

Integrity of the Data Set

In secondary analysis, the investigator must determine that the data set is valid. Documentation exists which establishes integrity of the data set, including such issues as screening of potential subjects, refusals, training of interviewers, and decisions about missing values. This research is based on original data from a four-year prospective longitudinal study funded by NINR Grant No. RO1 NR03381 that examines Black and White caregivers informal and formal service use mix. The intent of the original study was to examine factors leading to caregivers' knowledge and use of services in a predominantly Midwestern community.

A total of 773 names were screened through random digit dialing by telephone interviews conducted at Kent State University and Case Western Reserve University. Upon further screening, 307 names were deemed ineligible for a variety of reasons, including care recipients who were less than 60 years of age, caregivers who were paid, or the cessation of caregiving responsibilities due to death or nursing home placement of the care recipient. Sixty caregivers refused to participate in the study. Demographic information and reasons for refusal were obtained from 36 (60%) of these potential subjects. The

chief reason reported for refusal to participate was that the caregiver was "too busy".

The adequacy of data collection methods for the original study was determined, in part, through an extensive training program conducted by the co-investigators. Exclusively designed for the study was a comprehensive 15-page Interviewer Training Manual provided to each interviewer, as well as the opportunity to practice interviewing skills with prospective respondents.

The data set is comprised of N = 406 subjects, 395 of whom are Black and White caregivers of impaired older adults. All subjects were interviewed for approximately one hour, and the data collection instrument consisting of 245 questions was completed. Data were double-entered in SPSS Data Entry II, version 4.01, for verification purposes. The data set has been examined, and a code book developed. Frequencies, descriptives, correlation matrixes, crosstabs, and other preliminary displays were also done, so that investigators may embark on multivariate analyses. Raw data were available, as well as written information about directionality of scales, scoring instructions, and all other modifications made in the original database.

With respect to omitted or missing data, each item in the data set was examined in SPSS for Windows Release 6.1

for missing values. Detailed documentation regarding missing items is available for both quantitative and qualitative data, including decisions about substitution of these values. For example, in Zarit's 22-item Burden Interview, one response was missing for item 139 in the data set. The decision was to substitute the mean of all other responses on that item (0 to 4 scale range) in the sample. Another example was the 20-item Center for Epidemiologic Studies Depression Scale (CES-D Scale), in which item 186 was missing. The substitution was based on the respondent's average of his/her other responses on this scale (0 to 3 scale range). Additionally, when substituting the average response, the number was rounded to the nearest whole number in each case.

Missing Items in the Present Study

Items in three domains of the data set were missing. For item 237, year of birth was missing for two of the 399 subjects who refused to provide this information. Therefore, the sample mean for age was substituted for these subjects. Qualitative data for item 238, "To what ethnic background do you identify yourself?", was missing for three subjects, in which case the decision was to leave these responses as is. These three subjects subsequently were retained in the analysis because their racial classification was known. For item 234, mean household

income (before taxes) by race was substituted for the 13 subjects who "did not know", and 24 subjects who "refused" to provide this information.

Instrument Construction and Measurement

Perceived Health Status Measure. A single-item was used to assess caregivers' perceived health status in the present study. The item asked respondents to rate their health in the past month as (4) excellent, (3) good, (2) fair, or (1) poor in order to capture each caregiver's perception of his or her own health status. Self-rated health has been defended on the basis that it is a reliable indicator of objective physical health (LaRue, Bank, Jarvik & Hetland, 1979; Liang, 1986), and is racially unbiased (Gibson, 1991). Additionally, several researchers have demonstrated that self-assessed health was able to predict mortality (Idler, & Kasl, 1991; Mossey & Shapiro, 1982; Rakowski, Mor & Hiris, 1991).

The single item indicator had been deemed as an interval scale in the present study. According to Nunnally (1978), an interval scale is one in which (1) the rank-ordering of objects is known with respect to an attribute, (2) it is known how far apart the objects are from one another with respect to the attribute, but (3) no information is available about the "absolute" magnitude of the attribute for any subject. Such intervals are

determined without actually knowing the absolute magnitude of perceived health status for any particular individual. Nunnally (1978) argued that while the intervals are assumed to be equal, a distinction must be drawn between the character of the measurement scale, and the practical implications of the scale points. That is, the intervals for actual perceived health status might have very different implications in terms of age, gender, race, and length of caregiving in the present study.

Although the use of single-item indicators is not common in nursing research, a case has been made for the validity of single-item indicators. In particular, single-item indicators can provide valid measures of global perceptions, such as perceived health status (Youngblut & Casper, 1993, p. 463), because they allow informants to "consider the factors that are important to them and to differentially weight these aspects in a way that makes sense", rather than having researchers determine the weighting of each aspect of the relevant concept. It has been argued that a single item indicator can provide a clear conceptual definition of a latent concept. In addition, unlike the use of scales or multiple indicators, the use of a single indicator avoids the potential problem of large amounts of random error in unidimensional concepts. Therefore, a nonspecific measure of health

status that allows respondents to indicate the objective information they have about their own health and how they feel about or evaluate that information (Davies & Ware, 1981) has been used.

In those studies where higher perceived health status leads to health promoting behaviors, multidimensional questionnaires were employed to measure perceived health status. For example, Ware's (1976) nine-item Current Health Status Scale has been frequently used (Duffy, 1993; Foster, 1992; Frank-Stromborg, Pender, Walker & Sechrist, 1990; Killeen, 1989; Weitzel, 1989). This scale contains nine standardized items structured as statements of opinion with respect to current health, with validity and reliability previously established (Cronbach's alpha coefficients of 0.84 and 0.92). For this study, to the extent that the respondent defines perceived health status in a way that is personally meaningful, the global single item indicator can provide a measure that is sensitive to individual differences (Youngblut & Casper, 1993).

Measures of Health Promoting Behaviors.

The Health Promoting Behavior (HPB) Questionnaire in the present study was comprised of seven items, modified from the Index of Health Practices developed by Belloc and Breslow (1972) for the Human Population Laboratory in the Alameda County study. It was believed that certain common

personal habits could affect physical health (Belloc & Breslow, 1972). Several other investigators (Branch & Jette, 1984; Breslow & Breslow, 1993; Wiley & Camacho, 1980) also found regular meals, adequate sleep, near-average weight, physical activity, not eating between meals, avoidance of smoking, and alcohol abstinence to moderate drinking to be positively associated with good health. Therefore, it can be argued that these practices represent a measure of health promoting behavior in caregivers, thus allowing comparison of caregiver health practices with various non-caregiver populations on the same measure.

The seven items comprising the Health Practices Index (Belloc & Breslow, 1972), which were set in the Human Population Laboratory 23-page, self-administered questionnaire [constructed for the 1965 baseline survey] are delineated here:

1. "How many hours of sleep do you usually get a night?"
2. "How often do you eat breakfast?"
3. "How often do you eat in between your regular meals?"
4. "How often do you drink wine, beer, or liquor?"
5. "Have you even smoked cigarettes regularly"? and "Do you smoke cigarettes at the present time?"
6. "Here is a list of active things that people do in their free time. How often do you do any of these things?" ("active sports," "swimming or taking long walks," "hunting or fishing," "doing physical exercises," "working in the garden").
7. "How tall are you?" and "How much do you weigh?"

In the construction of the index, the scoring was such that one point was credited for each of seven practices that decrease risk: (1) usual hours of sleep 7 or 8 hours a night; (2) eat breakfast almost every day; (3) eat between meals only once in a while, rarely, or never; (4) weight within the range of 5 percent under and 19.99 percent over the desirable standard weight for men, or not more than 9.99 percent over for women; (5) often or sometimes engage in active sports, swim, or take long walks, or often garden or do physical exercises; (6) drink not more than four drinks at a time; and (7) never smoked cigarettes (Berkman & Breslow, 1983). Thus, the Health Practices Index was scored by dichotomizing the responses of the seven health-practices, and assigning one point for each response where an individual fell in the positive half of the dichotomy. A summary measure of the "Index of Health Practices" was obtained for each subject, wherein one point is credited for each of seven low-risk health practices (Berkman & Breslow, 1983). Thus, the score on the Index can range from 0 to 7.

However, personal communication with the Chief of the Human Population Laboratory in Alameda, California, on March 3, 1994, Dr. George Kaplan revealed that a summary score is not currently being used for the Health Practices Index, unless the investigator is interested in a crude

analysis. These researchers are moving away from indices in the past 12 to 15 years, and prefer to examine individual items in an attempt to understand what is happening with individual behavior. A count of the total number of health promoting behaviors, as well as individual measures of health behaviors were analyzed in this study.

In separate investigations, Meltzer and Hochstim (1970) and Hochstim and Renne (1971) examined reliability and validity measures of the 23-page Survey of Health of Ways of Living, [of which the 7-item Health Practices Index is included]. However, reliability and validity for the Health Practices Index, per se, were not reported. While neither study provided reliability or validity from the 1965 baseline survey of the Health Practices Index, Belloc and Breslow (1972) contend that the questionnaire items have been found reliable, and those items about health status correspond favorably with medical records in the circumstances where it has been possible to make comparisons.

A modified version of the Health Practices Index developed by Belloc and Breslow (1972) was used as a measure of caregivers' health promoting behaviors in the present study. The seven-item Health Practices Index used in the Alameda County study in 1965 may be used as a measure of health promoting behaviors. Use of the Health

Promoting Behaviors questionnaire can be justified as a total count or by examining each individual item, to determine which of the seven individual items best represents physical health practices of caregivers. Subsequently, a determination can be made if perceived health status actually does influence the frequency and intensity of engaging in health promoting behaviors as Pender's (1987) model posits, and as examined in this study of Black and White caregivers.

The items in the Health Promoting Behaviors Questionnaire are similar to those in the Health Practices Index (Belloc & Breslow, 1972). However, two items in the Health Practices Index are modified in the data set. That is, no objective measures of height and weight are established. The Alameda County study permitted the investigators to determine a more objective measure for weight, by asking the respondent, "How tall are you?" and "How much do you weigh?". Low-risk health habits were established for men and women in their study [within the range of five percent under, and 19.99 percent over the desirable standard for weight for men, or not more than 9.99 percent over for women] (Berkman, Breslow, & Wingard, 1983). A proxy measure, "Have you been told that you are overweight?" was substituted in the original data set, and subsequently used in this research. Also, instead of

asking both questions pertaining to smoking, as was done in the Health Practices Index, the question "Have you ever smoked cigarettes regularly?" was excluded from the original data set, eliminating past smoking behavior. These modifications were incorporated in the data set that was used in this study. The overall effect of modifying these items may be narrower scoring, which limits the ability to compare results with other studies on these two measures.

The modified Health Promotion Behaviors questionnaire to be used in the present study is provided below. The response frame for the specific items measuring health practices of caregivers may be found in Appendix G. The actual questions asked of the caregiver are:

1. "How many hours of sleep do you usually get each night?"
2. "How often do you eat breakfast?"
3. "How often do you eat in between your regular meals?"
4. "How often do you drink wine, beer, or liquor?"
5. "Do you smoke cigarettes at the present time?"
6. "Here is a list of active things that some people do in their free time. How often do any of these things?" ("swim or take long walks", "physical exercises", "active sports", "gardening", "fishing or hunting").
7. "Have you been told that you are overweight?"

The scoring will be such that one point is credited for each of seven health practices that decrease risk as in Belloc and Breslow's (1972) work: (1) usual hours of sleep 7 or 8 hours a night; (2) eat breakfast almost every day;

(3) eat between meals rarely or never; (4) drink not more than two drinks at a time; (5) does not smoke cigarettes at the present time; (6) often or sometimes engage in active sports, swim, or take long walks, or often garden or do physical exercises; and (7) not been told he/she is overweight.

Explaining the merits and problems of this seven-item index will assist in evaluating the utility of the scale as a measure of health promoting practices of caregivers in the present study. In the case of secondary analysis, data from the Health Promotion Behavior questionnaire will be critically evaluated for its usefulness and non-usefulness with caregiver populations. A health promotion behavior score can be computed by counting the total number of health promoting behaviors reported by each subject, resulting in a score range from 0 to 7. The higher the number of health practices for an individual, the greater the measure of health promotion.

Additionally, the data will be described for its accuracy. A factor analysis might help establish construct validity of the measure. There is always bias and social desirability of responses that contribute to measurement error. These data undoubtedly contain a certain amount of measurement error, that is, systematic errors due to deliberate falsification, and random errors due to

carelessness or uncertainty. The effects of such errors on the analysis depend on how large they are, and whether or not errors are correlated with health practices (Bereiter, 1967). Whatever the source of measurement error, the investigator is compelled to determine how much error is contained in the data set. One crude estimate of measurement error will be examination of the distribution of caregiver responses in the present study.

Because reliability is an important issue in the use of any measure, estimates of reliability were determined for the Health Promoting Behaviors questionnaire as well as the open-ended question. Polit and Hunglar (1995) suggest that ordinarily 10 to 20 pretested schedules should be sufficient to determine clarity, research adequacy, and freedom from bias in research instruments. Therefore, the test-retest reliability measured for the 20 subjects on the variables of interest in the original study is considered appropriate for the present study. It is assumed that no bias exists in the question. The assumption is made that the question was asked by interviewers in a similar manner. In addition, training and rebriefing indicated that consistency was maintained in the way interviewers asked the open-ended question.

The utility of the modified Health Practices Index as a measure of physical health behaviors in caregivers was

established in this study. While the Health Promotion Behaviors questionnaire is limited to assessment of physical health practices of caregivers, and may exclude the broader psychological or social aspects of health, nurses can begin to identify lifestyle practices that are beneficial, and those that pose a threat to caregivers' physical health. Also, modifying two items in the Health Practices Index will limit comparison of those items with results from previous research (Belloc & Breslow, 1972).

Open Ended Question. Respondents will also be asked one open-ended question: "In general, what do you do to stay healthy?" The rationale for inclusion of this question is based on an empirical study of Groves, Fultz, and Martin (1992). These researchers explored how closely respondents' and researchers' intended meanings correspond, and found that an open-ended question used as a follow-up gives useful information on the perceived meaning of survey questions.

Variables to be Used in the Study

The measures used in the present study are from the original study of "Black vs White Caregivers' Formal/Informal Service Use". Variables selected for inclusion in the present study are found (see Figure 2).

These measures are: (1) Caregiver characteristics which include Age, Gender, Race, and Length of Caregiving;

(2) Caregiver Perceived Health Status; and (3) Health Promoting Behaviors.

The Age of the caregiver in the original study was determined by asking the respondent to indicate his/her actual birthdate. The Gender and Race of the caregiver was determined by interviewer observation, and the self-identified ethnicity of the caregiver.

Perceived Health Status, defined as a subjective measure of self-rated physical health, was reported by caregivers of impaired elders. The caregiver was asked to rate his or her health as excellent, good, fair, or poor.

The seven-item Health Practices Index as developed by Belloc and Breslow (1972) was modified to formulate Figure 2.

List of Variables in the Study

Independent Variables	Dependent Variables
Age	Perceived Health Status (measured by Self-Assessed Health)
Gender	
Race	
Length of Caregiving (all measured by demographic profile)	Health Promotion Behaviors (measured by Health Promotion Questionnaire)

seven-item Health Promotion Behaviors Questionnaire. And in addition, an open-ended question was asked, "In general, what do you do to stay healthy"?

Sampling

In describing secondary analysis in nursing research, Jacobson, Hamilton, and Galloway (1993) argue that large random samples are frequently desired to increase statistical power and generalizability. In the original study, power was calculated based on Cohen and Cohen (1975) as follows: "Given an effect size of .20, the power of a test at the .05 level of statistical significance (two tailed) will be .80 for Whites and Blacks taken separately, and over .90 where the total group is analyzed".

A methodological decision was made to include all Black and White caregivers from the original data set in this research, totaling 395 observations. The original sample consisted of 136 Black and 259 White caregivers obtained through random digit dialing. Additional rationale justifying the sample size is the belief that the proportion of Black to White caregivers in the sample is somewhat congruent with the proportion of caregivers in the population. Black subjects were over-sampled, and because examination of racial differences was a key variable in studying perceived health status and health promoting

behaviors of caregivers, this decision is of particular importance.

Data Analysis

Data will be analyzed based on four questions in the present study:

Research Question 1: Is there a difference in perceived health status of Black and White caregivers of impaired elders?

Research Question 2: Is there a difference in health promoting behaviors in Black and White caregivers of impaired elders?

Research Question 3: What do Black and White caregivers report that they do to stay healthy?

Research Question 4: What is the effect of age, gender, race, and length of caregiving on perceived health status and, in turn, what effect does perceived health status have on health promoting behaviors of Black and White caregivers of impaired elders?

Data Analysis Plan

The first two research questions guiding this study will be answered using descriptive statistics. The third research question [which is based on the open-ended question asked of each respondent, "In general, what do you do to stay healthy"] was answered using the research technique of content analysis. The most appropriate method

to analyze the fourth research question is by performing two multiple regressions.

Content Analysis

The technique used to analyze the Research Question 3 was content analysis. A Wordperfect software program was used for transcription of caregivers' responses to the open-ended question, "In general, what do you do to stay healthy?". Interviewer notes were typed verbatim in Wordperfect.

Miles and Huberman (1994) further describe components of an interactive model of data analysis as (1) data collection, (2) data reduction, (3) data display, and (4) drawing/verifying conclusions. Their suggestion to focus primarily on the content of a meta-matrix or multicase display that incorporates all of the (reduced) data, without reference to single cases, was utilized. Centrally organizing variables or concepts in a content-analytic summary table helps to increase understanding of the structure of data across all cases. Such a table arranges all of the pertinent data in readily analyzable form, wherein making contrasts, comparison, and counting occur with ease. This sort of tabulation deliberately precludes the case identification of data (Miles & Huberman, 1994). The intent is to be more conceptual, observing main trends across all cases.

The unit of analysis, or the unit that was used to categorize the content into meaningful groupings in this study was a theme. A theme is a larger and more inclusive unit of analysis than individual words. The themes may be a phrase or sentence embodying ideas or making an assertion about particular behaviors that caregivers perform in order to stay healthy. A theme, consisting of each individual health promoting behavior recorded by the interviewer, was identified as the unit of analysis used to categorize the content into meaningful groupings. The investigator then rated each recorded health behavior on the basis of a pre-existing coding scheme based on these themes. As analysis continued, ideas evolved and were refined about how to assemble data into patterns and themes. Recognizing patterns and themes in the qualitative data were refined as the investigator read, reread and coded the data, or examined the configuration of numbers generated during counting. Counting forces the investigator to examine all the data, not just those data supporting biases. Miles and Huberman (1994) caution the researcher to not accept patterns too readily, but to look for more evidence of the same pattern and evidence that would disconfirm a pattern.

Reliability and validity of the content analysis was established by an expert judge. An independent expert with a broad understanding of health behaviors applied the same

recording instructions on every case, as did the investigator. Differences and areas of uncertainty were discussed until consensus was reached between the two coders.

Caregiver responses can be compared and contrasted with subjects in the general population, thus identifying similarities and differences in health practices on this measure. It is conjectured that content analysis of this item will enrich the findings of the study, allowing for greater understanding of the broader psychological or social dimensions of health behaviors, which the Health Promoting Behavior Questionnaire does not address.

Protection of Human Subjects

Institutional Review Board approval was obtained to conduct this study. Anonymity will be maintained in the secondary analysis. Additionally, names will not be used, responses will be represented by a code number, and data will be reported in aggregate form in any publication or presentation that results.

CHAPTER 4

DATA ANALYSIS

In this chapter, a description of the sample, evaluation of statistical assumptions, and results of statistical analysis of the four research questions is presented. The design is a secondary analysis of an existing data set. All statistical analyses were conducted using SPSS/PC+ version 5.01 software and/or SPSS for Windows Release 6.1.

The assumptions of the statistical tests for Research Questions 1, 2, and 4 are based on quantitative analysis, and are discussed when each research question is answered. The assumptions of the third research question are based on content analysis. Miles and Huberman's (1994) methods for drawing and verifying conclusions were used to address these assumptions. The questions guiding the study were:

Research Question 1: Is there a difference in perceived health status of Black and White caregivers of impaired elders?

Research Question 2: Is there a difference in health promoting behaviors of Black and White caregivers of impaired elders?

Research Question 3: What do Black and White caregivers report that they do to stay healthy?

Research Question 4: What is the effect of age, gender, race, and length of caregiving on perceived health status, and in turn, what is the effect of perceived health status on health promoting behaviors in Black and White caregivers of impaired elders?

Description of the Sample

Characteristics of the sample are described below in the tables for Black and White caregivers, and include income, education, marital status, and employment status, as well as some characteristics of the impaired elders. The sample was comprised of a total of 395 caregivers, and the data were comparable to the national profile of caregivers (Stone, Cafferata & Sangl, 1987).

The gender composition of the sample was comprised of 64 (16.2%) males and 331 (83.8%) females (see Table 1 below). The racial mix of the two groups was 34.4% Black and 65.6% White caregivers. Roughly five percent of the sample were Black male, 30 percent Black female, 11 percent White male, and 54 percent White female caregivers. As expected, the majority of caregivers are White female (54.2%).

Table 1

Age, Gender, and Race of 136 Black and 259 White Caregivers of Impaired Elders in the Study

Race
Blacks = 136 (34.4%)
Whites = 259 (65.6%)

Gender
Males = 64 (16.2%)
Females = 331 (83.8%)

Race/Gender
Black Males = 19 (4.8%)
Black Females = 117 (29.6%)
White Males = 45 (11.4%)
White Females = 214 (54.2%)

Age of Caregiver
Range = 15 - 91
Mean Age for Blacks = 50.5 (sd = 14.0)
Mean Age for Whites = 53.8 (sd = 13.7)
(t = 2.30, df = 393, p = .022)

The sample mean of 52.7 (sd = 13.8) was substituted for two subjects with missing data on caregiver age.

The age range of subjects in the sample was 15 to 91 years, with a mean age of 50.5 years (sd = 14.0) for Blacks, and mean age of 53.8 years (sd = 13.7) for White caregivers. Caregiver age was significantly different for Blacks and Whites (t = 2.30, df = 393, p = .05). White caregivers are approximately three years older on average than Black caregivers.

Table 2

Length of Caregiving of 136 Black and 295 White Caregivers of Impaired Elders

Length of Time Caregiving
Range = 1 - 480 months
Mean for Blacks = 61.5 (sd = 60.5)
Mean for Whites = 58.4 (sd = 64.6)

	Blacks	Whites
Less than 12 months	14 (10.3%)	39 (15.1%)
12 - 35 months	41 (30.1%)	76 (29.3%)
36 - 59 months	30 (22.1%)	44 (17.0%)
5 - 10 years	30 (22.1%)	64 (24.7%)
11 or more years	21 (15.4%)	36 (13.9%)
	136 (100%)	259 (100%)

Length of providing care ranged from 1 to 480 months. Also, the breakdown for length of caregiving into five categories in Table 2 provides the number and percentages of caregivers caring for an impaired elder for varying lengths of time. There was no statistical difference in length of caregiving for the two groups. Also, closer examination of the data revealed that the 480 month case represents a daughter who had provided care to her 96-year-old mother for 40 years because, after her widowhood at age 45, the care recipient did not go out with anyone but the caregiver.

Table 3

Annual Household Income* of 136 Black and 259 White Caregivers of Impaired Elders (Before Taxes)

Income	Blacks	Whites
(0-$4,999)	10 (7.4%)	8 (3.1%)
($5,000-$9,999)	17 (12.5%)	14 (5.4%)
($10,000=19,999)	41 (30.1%)	41 (15.8%)
($20,000-29,999)	23 (16.9%)	78 (30.1%)
($30,000-39,999)	18 (13.2%)	51 (19.7%)
($40,000 and Over)	27 (20.0%)	67 (25.9%)
	136 (100%)	259 (100%)

(Chi-Square = 27.5, df = 5, p = .0000)

* The mean for family income was substituted in each racial group for the 24 subjects who "refused" to report and/or the 13 who "did not know".

While twice as many Black caregivers as Whites were in the three lowest income groups, the highest income group is fairly comparable. There is, however, a significant difference in the two groups with White caregivers reporting higher income.

Table 4

Number of Years of Education for 136 Black and 259 White Caregivers of Impaired Elders

Range for Last Year of School = 4 - 29 years
Mean for Blacks = 13.7 (sd = 2.7)
Mean for Whites = 13.1 (sd = 2.4)

(t = 2.38, df 393, p = .018)

Education Grouped by Years

	Blacks	Whites
Less than High School	21 (15.4%)	27 (10.4%)
High School Graduate	47 (34.6%)	82 (31.7%)
Some Tech or College	41 (30.1%)	62 (23.9%)
College Graduate	16 (11.8%)	59 (22.8%)
Post Graduate Work	11 (8.1%)	29 (11.2%)
	136 (100%)	259 (100%)

(Chi-square = 9.94, df = 4, p = .0414)

Regardless of whether years of education is examined as a continuous or grouped variable, there is a statistical significance difference in the two groups. While a higher percent of Black caregivers have less than high school education (15.4%), Blacks are also more likely than Whites to have a high school diploma and some college or technical school. It appears that twice as many White caregivers as Blacks graduate from college.

As for employment status, more Blacks are non-employed, but there were no differences found in the three work classifications [non-employed, volunteer, and work for pay] for the two groups. Nearly 61 percent of all caregivers in the sample work for pay or volunteer. Of the 240 caregivers who work for pay or volunteer, there were no significant differences in the mean hours worked per week, or the caregivers who have flexible work hours in the two racial groups. On average, caregivers work less than 40 hours per week.

Table 5

Marital Status of 136 Black and 259 White Caregivers of Impaired Elders

Marital Status	Blacks	Whites
Married	48 (35.3%)	165 (63.7%)
Widowed	17 (12.5%)	25 (9.7%)
Separated	9 (6.6%)	3 (1.2%)
Divorced	30 (22.1%)	31 (12.0%)
Never Married	32 (23.5%)	35 (13.5%)
	136 (100%)	259 (100%)

(Chi-Square = 33.9, df = 4, p = .0000)

A higher percentage of Black caregivers are widowed, separated, divorced, or never married. The majority of White caregivers in this sample were married.

Table 6

Caregiver Relationship to Impaired Elder of 136 Black and 259 White Caregivers

	Blacks	Whites
Spouse	11 (8.1%)	28 (10.8%)
Parent/Parent-in-law	79 (58.1%)	175 (67.6%)
Other Relative	36 (26.5%)	35 (13.5%)
Non-Relative	10 (7.4%)	21 (8.1%)
	136 (100%)	259 (100%)

(Chi-square = 10.3, df = 3, p = .0161)

Other relative includes siblings and grandparents; non-relative includes friends and neighbors.

Although there is a statistical difference in the two groups for relationship to their impaired elder, the majority of the sample, regardless of race, are adult children caring for parents. A very small percentage are spousal caregivers.

Table 7

Impaired Elders' Age for 136 Black and 259 White Caregivers

Mean = 78.5 (sd = 9.8)
Range = 60 - 108

	Blacks	Whites
60 - 69	31 (22.8%)	30 (11.6%)
70 - 79	46 (33.8%)	84 (32.4%)
80 - 89	39 (28.7%)	117 (45.2%)
90 and over	20 (14.7%)	28 (10.8%)
	136 (100%)	259 (100%)

(Chi-square = 14.6, df = 3, p = .0022)

Three impaired elders in the sample were over 100 years old, but the majority of elders were between 70 and 90 years of age. A higher proportion of Blacks are younger (60-69 years) than White caregivers. The two racial groups of impaired elders are statistically different in age.

Table 8

ADL Scores for Impaired Elders of 136 Black and 259 White Caregivers

Mean ADL Scores = 2.24 (sd = 2.1)
Range of Activities = 0 - 6 requiring assistance

	Blacks	Whites
No Assistance	36 (26.5%)	69 (26.6%)
1 - 2 Activities	41 (30.1%)	96 (37.1%)
3 - 4 Activities	22 (16.2%)	44 (17.0%)
5 - 6 Activities	37 (27.2%)	50 (19.3%)
	136 (100%)	259 (100%)

A higher percentage of Black impaired elders require assistance in five or six activities of daily living. However, the two groups are not significantly different in ADL scores.

Ethnicity and Race

Data [ethnicity, race, and religion] were categorized by the investigator in an effort to determine ethnicity and racial identity for each subject. As indicated in Tables 9 - 13, there is sufficient information to suggest the "Black" and "White" categories do not provide the consistency needed in classifying identities. Because the racial categories have no cultural meaning they, in fact, efface ethnic and religious affiliations. Ethnicity was

self-identified by the respondent, and race was determined by the interviewer's perception. Yet, the two terms ethnicity and race are not equivalent. Ethnicity has a cultural referent, and race has a putatively biological one. The two terms are incommensurate and cannot be used interchangeably (Gaines, 1994).

In response to the question, "With what ethnic background do you identify yourself?", most of the 'White' subjects identified themselves by country, e.g., German, Irish, Italian, English, French, while some identified their continent or nationality of origin, e.g., European, American, a geographical region, a religion (such as Jewish), color, ethnicity, and/or a language (see Tables 9 through 13). However, ethnicity is not equated with nationality. Ethnicity is part of nationality or religion, e.g., French Protestant vs. French Catholic. Nations have many ethnic groups within them. For example, among Hungarians, five distinct ethnic and religious identities emerged from the data: Catholic, Orthodox, Calvinist, Jewish, and Gypsy. The caregiver who identified himself as "Bohemian-Slovenian" knew what was meant when answering the question related to ethnic background.

The way in which the ethnicity question was asked produced different levels or systems of identities, resulting in different data for different subjects. A

variety of hybrid names were obtained. One subject was in all probability married to an English person, who was Methodist, but she was of Polish-Hungarian ancestry. Further, an "archeology" of terms, Negro, African American, Black, etcetera--each from a different period in American history--was obtained for the Black caregivers. However, exploration of the probability there are different meanings in these categories was not permitted in this study.

Further, the respondents were asked, "Do you identify yourself with a certain church or religious faith?" If yes, "Which of the following faiths do you practice? (1) Catholic; (2) Protestant; (3) Jewish; (4) Muslim; (5) Other [specify other]." Rather than merely asking what faith do the caregivers practice, Gaines (1994) suggests inquiring about faith and the name of the church that the caregiver goes to. Consequently, more information would be available to classify identities.

After leaving the respondent, the interviewer identified the caregiver's race as 'Black' or 'White', based on the interviewer's impression or observation. All subjects' self-identified ethnic backgrounds are provided in the tables that follow. The 136 subjects that were classified as 'Black' by the interviewers, in fact, described their 'ethnic' identity in the following 17 characterizations:

Table 9

Self-Identified Ethnicity of "Black" Subjects (N = 136)

Self-Identified Ethnic Group	Number
Black	45
African American	32
Afro-American	18
Black American	16
Negro	10
Black-Negro	3
Afro American-Black	2
Full Negro-A little White	1
Everything	1
Not Applicable	1
Black-Afro American	1
Black-African American	1
Negro-Black	1
African	1
American	1
Mixed-Cherokee Indian-African	1
Other	1

The most frequently self-identified classification was "Black" (33.1%), followed by 23.5 percent African American, 13.2 percent Afro American, 11.8 percent Black American and 7.3 percent Negro. The remaining categories were quite small, frequently consisting of only one caregiver.

Table 10

Self-Identified Ethnicity of "White" Subjects with Four or More Subjects per Category (N = 142)

Self-Identified Ethnic Group	Number
German	26
Italian	23
Polish	17
Irish	14
American	12
Slovak	12
English	8
Slovenian	7
White	6
Hungarian	5
German-Irish	4
Russian	4
Jewish	4

While a total of 108 self-identified ethnic groups characterized the 259 White caregivers in the study, the single largest group (ten percent) represented German. Only six subjects identified as 'White' by the interviewer actually identified their ethnic group as White. Two subjects categorized as 'White' by the interviewer self-identified, in part, as 'American Indian' and 'Spanish'; similarly, one 'Black' subject was 'Cherokee Indian'. Also, of note, 12 White caregivers and one Black caregiver identified his or her ethnic group as 'American'.

Table 11

Self-Identified Ethnicity of "White" Subjects with Two or Three Subjects per Category (N = 39)

Self-Identified Ethnic Group	Number
European	3
Czechoslovakian	3
Caucasian	3
Romanian	3
Scotch-Irish	3
White-German	2
German-English	2
Slovak-Hungarian	2
Scotch-Irish-German	2
French	2
Irish-Polish	2
White-Caucasian	2
Scottish	2
German-Slovak	2
Lebanese	2
English-Scottish	2
Croatian	2

Thirty-nine Whites were classified in ethnic groups comprised of two or three subjects each. Of this group, three were Caucasian, and two were White-Caucasian.

Table 12

Self-Identified Ethnic Background for "White" Subjects Each with his/her own Discrete Category (N = 78)

Self-Identified Ethnic Group	
Heinz 57-Everything	Polish-Irish
Eastern European Holocaust Survivor-American	Swiss-German
	German-Slovenian
Feminist	Bohemian-English
Mixed	Slovenian-Polish
Not Applicable	English-Dutch-Scotch
?	Hungarian-American
Slovak-Russian	German-French
Hungarian-Gypsy	Scotch-German
Polish-Hungarian	Russian-Polish
American-White-Polish	Slovenian-Italian
Italian-Russian	American Jew
Polish-Russian	Russian-American
Finnish	German-Lithuanian
Irish-German	German-Welch
Russian-Slovak	German-Irish-French-Australian
Norwegian-French-German	German-Spanish-Irish
German-Irish-Italian	German-American
Polish-Ukrainian	Polish-American
German-Russian-Dane	Irish-Slovak
English-Bohemian	German-French-Indian-Irish
French-Amer. Indian-Irish	Scottish-Irish
Swedish	Dutch-English
Bohemian-Slovenian	German-Swiss
Bohemian	French-Irish
Slovak-Polish	Jewish-French
French-Scotch-German	German-Polish
German--Italian	Armenian-English
American-German	German-Hungarian-Russian
German-Scotch-Irish	Polish-Jew
Bohemian-Czechoslovakian	Austrian-German
Lithuanian	Russian-Hungarian
Eastern European Jew	Hungarian-Jewish
Hungarian-German	Italian-White
Irish-German	Italian-American
English-German	Slovak-Bohemian
French-American Indian	Irish-Lithuanian
Ukrainian	Slovenian-Slovak
European-American	Slovak-White
German-Polish	

The single largest group of White subjects (N = 78) reported his or her own, distinct ethnic background. Mixed ancestry characterized most subjects in this category; however, the first six subjects listed in Table 12 provided rather unusual ethnic backgrounds that were not always descriptive.

The eleven subjects listed below were eliminated from the study (i.e., nine Hispanics and two Indians) because they were neither classified as "Black" or White". Interviewers, not the caregivers, had classified them on the basis of physical appearance alone. The data collection instrument provided interviewers with two choices; that is, subjects were classified as either Black or White. However, these 11 subjects provide "a perfect critique of the invalidity of the governmental categories of minorities in this country" (Gaines, 1994).

As was expected, two individuals identified as Black in the original sample were, in fact, Hispanic and Native American. The lack of real color "lines" produces cases of people who are Black but look White or the reverse. Traditional categories of American research (i. e., Black and White) do not work for American Indians or Latinos here because they often exhibit similar skin color.

Table 13

Non-Black and Non-White Caregivers Erroneously Classified by Interviewers as Black or White (N = 11)

Self-Identified Ethnicity	Interviewer Designation
American Mexican	White
American Indian	White
Puerto Rican	White
Puerto Rican	White
Hispanic	White
Puerto Rican	White
Mexican	White
Native American	Black
Hispanic	Black
Hispanic	White
Latino	White

The popular notions of race do not correspond to biological or cultural reality. Because the large number of different ethnic groups are concealed by the labels "Black" and "White", future research can make a transition to the newer conceptual perspective.

Reliability of Instruments. Reliability of the single item measuring perceived health status was not established in the original study, but has been shown in numerous studies to be as valid a measure in predicting outcomes as professionally assessed health. Further, Idler and Kasl (1991) recently demonstrated that self-assessed health was able to predict mortality.

Test-retest was done during Time2 data collection on 20 caregivers in the original sample, which provided a measure of stability of the Health Promoting Behaviors questionnaire (Waltz, Strickland & Lenz, 1991). Two-to-four week intervals between data collection points was established for this procedure. Fifteen (or 75 percent) of the subsample were women, and seven (or 35 percent) were Black. The mean age was 52.2 years (sd=13.3), with caregivers ranging from 22 to 69 years. While only six of the 20 test-retest interviews were conducted by the same interviewer, a one-tailed correlation coefficient ($r = .73$, $p = .001$) revealed a fairly low degree of stability of the seven-item questionnaire. This correlation represents the total number of reported health promoting behaviors at two time points for these caregivers.

Additionally, in the same test-retest described here, the open-ended question, "In general, what do you do to stay healthy?" was examined for stability of the qualitative material. Sixty-five percent of the responses within a two to four week period were reproduced by the 20 subjects.

Data Analysis Answering the Four Research Questions

Research Question 1: Is there a difference in perceived health status of Black and White caregivers of impaired elders?

It has been argued in this study that data from the single item indicator are assumed to be measured on a continuum, which has been "cut" by four possible response options, "In the past month, has your health been (4) excellent; (3) good; (2) fair; (1) poor?" Data are therefore considered interval level data.

Table 14

Difference in Black and White Caregivers' Perceived Health Status

Race	Mean (sd)	t-value	df	p
Blacks	2.99 (.79)	1.30	393	.20
Whites	2.88 (.82)			

Levene's Test for Equality of Variances: F = .30, p = .59

Both Black and White caregivers more frequently report their health has been "good" in the past month (52.2% and 46.7%, respectively). Results of the t-test for equality of means for Research Question 1 revealed no statistical difference in the two groups on perceived health status.

Further, the assumptions of the t-test [independent samples, drawn from approximately normal populations, with equal variances] were tested for violations. Because Levene's test for equality of variances was not

significantly different (see Table 14 above), equal variances were assumed.

Research Question 2: "Is there a difference in health promoting behaviors of Black and White caregivers of impaired elders?"

The results of the t-test examining total health behaviors are significant, indicating that Whites report more health promoting behaviors than Black caregivers (see Table 15). The mean difference in the total number of health behaviors reported in the two groups is .40.

Table 15

Differences in Caregivers' Total Number of Reported Health Promoting Behaviors by Race

Race	Mean (sd)	t-value	df	p
Blacks	4.26 (1.31)	2.81	393	> .05
Whites	4.66 (1.34)			

Levene's Test for Equality of Variances: F = .61, p = .44

Caregiver responses were dichotomously scored [yes or no] on the Health Promoting Behaviors questionnaire. That

meant a caregiver scores one, and only one point, for each of the seven behaviors that promote health: (1) usual hours of sleep 7 or 8 hours a night; (2) eat breakfast almost every day; (3) eat between meals sometimes/rarely or never; (4) drink not more than two drinks at one sitting; (5) does not smoke cigarettes at the present time; (6) often or sometimes engage in active sports, or take long walks, or often garden or do physical exercises; and (7) not been told he/she is overweight.

Further, the second research question is based on "counting" the total number of health promoting behaviors reported by each caregiver. An argument is made that counting the total number of health promoting behaviors that caregivers report [ranging from 0 to 7], may be considered ratio data. These data are considered ratio level because there is an absolute zero. Thus, it is conceivable that some caregivers report that they do not participate in any of the health promoting behaviors included in the questionnaire.

Therefore, a t-test designed to compare two sets of scores when the dependent variables is measured on an interval or ratio scale (Woods & Catanzaro, 1988), was deemed appropriate to answer the second research question. Again, the assumptions for the t-test were met. Table 16

below provides the total number and percent of reported health promoting behaviors for Black and White caregivers.

Table 16

Number and Percent of Reported Health Promoting Behaviors in Black and White Caregivers of Impaired Elders

Number	Blacks	Whites
0	1 (.7%)	0 (0%)
1	3 (2.2%)	3 (1.2%)
2	5 (3.7%)	11 (4.2%)
3	28 (20.6%)	38 (14.7%)
4	39 (28.7%)	61 (23.6%)
5	38 (27.9%)	72 (27.8%)
6	17 (12.5%)	54 (20.8%)
7	5 (3.7%)	20 (7.7%)

Blacks reported a higher percentage of mid-range (3-5) health behaviors. However, White caregivers reported higher percentages of health behaviors than Blacks in the highest range (6-7) of health behaviors.

Table 17

Number and Percent of Caregivers' who Scored on Health Promoting Behaviors Questionnaire

Behaviors	Blacks (N =136)	Whites (N =259)
Sleep 7-8 Hours	51 (37.5%)	137 (52.9%)
Eat Breakfast	66 (48.5%)	152 (58.7%)
Snack Between Meals	90 (66.2%)	154 (59.5%)
0-2 Drinks/Sitting	124 (91.2%)	240 (92.7%)
Non-Smokers	89 (65.4%)	191 (73.7%)
Exercises	96 (70.6%)	204 (78.8%)
Swims/Walks	81 (59.6%)	174 (67.2%)
Physical Exer.	18 (13.2%)	53 (20.5%)
Active Sports	34 (25.0%)	64 (24.7%)
Gardening	28 (20.6%)	88 (34.0%)
Not Told Overweight	64 (47.1%)	129 (49.8%)

White caregivers report a higher percentage of sleep, eating breakfast, not smoking, and exercising than Blacks. On the other hand, Black caregivers scored higher only on snacking between meals. Drinking behavior and caregiver not being told he/she is overweight share similar percentages between the two racial groups. Also, White caregivers scored higher on three of the four specific physical activities.

Research Question 3: "What do caregivers report that they do to stay healthy?" was answered using content analysis. Sixteen health promoting behavioral themes emerged from the data as evidenced in Table 18 below.

Table 18 below represents the breakdown for all of the categorical health promoting behavioral themes mentioned by caregivers in the open-ended question. The average number of health promoting behavioral themes reported for the entire sample of 395 subjects was 2.3, ranging from 0 to 5. Although some of the proportions are exceedingly low, this study was concerned with identifying all possible theoretical health themes mentioned by caregivers. Five percent of the caregivers reported "doing nothing" to stay healthy.

Table 18

Content-Analysis Summary Table: Sixteen Health Promoting Behavioral Themes for the Entire Sample of Caregivers (N = 395)

	Sample
	N (%)
Nutrition	239 (60.5%)
Exercise and Sports	166 (42.0%)
Mental Activities	85 (21.5%)
Rest and Relaxation	83 (21.0%)
Recreation and Socializing	57 (14.4%)
Avoids Dangerous Items	46 (12.4%)*
Keeps Active/Stays Busy	44 (11.1%)*
Housekeeping, Work, Gardening	40 (10.1%)
Spiritual	34 (8.6%)*
Follows Medical Plan/ Seeks Professional Help	30 (7.6%)*
Take Vitamins	27 (3.0%)
Caregiver Does Nothing	20 (5.1%)
Volunteering/Doing for Others	16 (4.1%)
Uses Moderation/Common Sense	11 (2.8%)
Help Seeking	6 (1.5%)
Other Behaviors/Unknown	4 (1.0%)

The asterisks in Table 18 above indicate cases in which at least a 50 percent difference occurred in Black and White caregivers' mention of the health promoting behavioral themes. Black caregivers were more than twice as likely than Whites to mention "follows medical plan", almost three times as likely to mention "spirituality", and twice as likely to report "abstinence to moderate drinking behavior" and "avoiding harmful things" in general. On the

other hand, White caregivers were twice as likely to mention "keeping busy or staying active", "help seeking", "avoiding drugs", and "other behaviors" than Black caregivers; however, some of the percentages were so small as to be negligible.

The following tables compare smaller segments of health behavioral themes, including a breakdown of the highest and lowest categories mentioned by Black and White caregivers.

Table 19

Content-Analysis Summary Table: The Five Most Common Health Promoting Behavioral Themes Mentioned by 136 Black and 259 White Caregivers

	Blacks N (%)	Whites N (%)
Nutrition	86 (63.2%)	153 (59.1%)
Exercise and Sports	54 (39.7%)	112 (43.2%)
Mental Activities	31 (22.8%)	54 (20.8%)
Rest and Relaxation	27 (19.9%)	56 (21.6%)
Recreation and Socializing	17 (12.5%)	40 (15.4%)

The majority of caregivers that responded to the open-ended question said that they tried to eat right (60.5%) and exercise (42.0%). Rest and relaxation include sleep, while the remaining two categorical themes listed here are diversional in nature.

Table 20

Content-Analysis Summary Table: Midpoint Number and Percent of Health Promoting Behavioral Themes Mentioned by Black and White Caregivers

	Blacks N (%)	Whites N (%)
Keeps Active/Stays Busy	9 (6.6%)	35 (13.5%)
Housekeeping, Work, Gardening	12 (8.8%)	28 (10.8%)
Spiritual	20 (14.7%)	14 (5.4%)
Follows Medical Plan/ Seeks Professional Help	17 (12.5%)	13 (5.0%)

This categorical group of middle range number of health behavioral themes indicates a pattern of racial differences. While only 34 subjects reported spiritual aspects as health promoting, Blacks did so more frequently than White caregivers. Black caregivers also mention "following medical plan" more frequently, while White caregivers more often mention "keeping active or staying busy".

Table 21

Content-Analysis Summary Table: The Five Lowest Health Promoting Behavioral Themes Mentioned by 136 Black and 259 White Caregivers

	Blacks N (%)	Whites N (%)
Take Vitamins	9 (6.6%)	18 (6.9%)
Volunteering/ Doing for Others	4 (2.9%)	12 (4.6%)
Uses Moderation/ Common Sense	3 (3.2%)	8 (3.1%)
Help Seeking	1 (.7%)	5 (1.9%)
Other Behaviors/Unknown	0 (0%)	4 (1.5%)

The theme category of "volunteering or doing for others" was considered theoretically different from "housework, work, or gardening" in Table 20 above, because it was believed to involve a sense of altruism, which may serve to increase the caregiver's self-esteem. Additionally, because only one other study was found that reported a similar theme related to "use of moderation", it was important to retain this categorical theme. "Self-discipline to do things in moderation" was identified by Maloney, Fallon, and Wittenberg (1984) when older adults participating in focus groups were asked to discuss how they maintained or improved their own health. Likewise, help-seeking captured those subjects who sought, obtained,

or accepted help from others, presumably to assist in caregiving responsibilities.

Table 22

Content-Analysis Summary Table: Avoidance of High Risk Behaviors of Black and White Caregivers to Promote Health

	Blacks N (%)	Whites N (%)
High Risk Behaviors	18 (13.2%)	28 (10.7%)
Avoids Drinking	6 (4.4%)	7 (2.7%)
Avoids Smoking	5 (3.7%)	12 (4.6%)
Avoids Drugs	0 (0%)	4 (1.5%)
Avoids Harmful Things in general	7 (5.1%)	5 (1.9%)

The above table specifically describes risk avoidance behavior in Black and White caregivers. Of note, the frequency of those who mentioned smoking and drinking behaviors in the open-ended question is markedly less than responses in the Health Promoting Behaviors questionnaire (see Table 17, p. 119 above). This may be due to the fact that caregivers felt they had sufficiently addressed tobacco and alcohol use previously in the interview, and to mention them again would be repetitious.

In drawing and verifying conclusions, Miles & Huberman's (1994) tactics for (1) generating meaning, (2)

testing or confirming findings, and (3) standards for the quality of conclusions were used. The primary goal was to identify theme categories from caregivers' responses to the open-ended question. Initially, verbatim statements from the interview schedule were typed in WordPerfect for purposes of coding and subsequent analysis. A theme, consisting of each individual health promoting behavior recorded by the interviewer, was identified as the unit of analysis used to categorize the content into meaningful groupings. The investigator then rated each recorded health behavior or theme on the basis of a pre-existing coding scheme.

Afterward, an expert independently rated each health promoting behavioral theme mentioned by the caregivers. Interrater reliability was calculated using percent agreement. Eighty-eight percent agreement was determined by first calculating the percent of disagreement between the investigator and the expert. The total number of 121 disagreements was divided by the total number of 1,012 reported behaviors, and multiplied by 100 to obtain approximately 12 percent rate of disagreement.

It was determined, however, that the disagreement occurred primarily because the pre-existing coding scheme was inadequate, and did not sufficiently identify all of the behavioral themes that were needed to classify health

promoting behaviors mentioned by the caregivers. When health promoting behavioral themes that emerged from the data were inductively coded, 16 rather than the original 13 categories resulted (see Table 18, p. 121 above). For example, volunteering to include doing for others was added, which is more conceptually congruent with activities that increase self-esteem rather than work. Doing things in moderation or using common sense, and help seeking were also added. Once the revised coding scheme was developed, virtually 100 percent agreement was achieved between the investigator and expert.

The agreed upon health behavioral codes were entered in SPSS for Windows, Release 6.1 by the investigator, allowing for examination of frequency distributions and the potential for other basic quantitative analyses. The number of specific health behaviors mentioned by each caregiver was not the focus of Research Question 3; rather, for each subject, the redundant behaviors were collapsed to reflect health behavioral themes. For example, if a caregiver reported (1) "taking short walks", and (2) "riding a stationary bicycle", the caregiver was given one point in the "Exercise and Sports" category. In other words, the goal was to identify all of the possible health promoting behavioral themes that the caregivers elicited. The total number of different health behaviors reported by

each caregiver was a secondary aim. Similarly, the caregiver who reported "try to watch what I eat", and "try not to eat too much high fat food" was credited with healthy "nutrition". The caregiver who reported "taking medicine", and "seeing physician yearly" was credited as 'follows medical plan'.

There was a wide variety of responses reported by the caregivers. Responses such as "bicycle five miles per day", "karate four times per week", "lift weights three times per week", and "daily sports", "jogging", aerobics classes", "water aerobics" and "dance lessons" were classified as examples of exercise related health behaviors. Responses such as "try to eat right (a balanced diet)", "do not overeat", low fat diet", "no caffeine", and "drink a lot of water" were examples of nutritional health promotion behaviors.

The most extreme case of collapsing behavioral categories was the caregiver who reported engaging in eight different activities, "play bridge...read...go to the spa...work...shop...line dancing class... travel, and...play with computer", which were collapsed into four themes based on the coding scheme. Those that did no health behaviors reported "I don't exercise", "I don't eat right", "I don't do anything to stay healthy".

In conclusion, Miles and Huberman's (1994) tactics for drawing and verifying conclusions were used for the content analysis. Meaning of caregivers' reported health behaviors in the open-ended question was generated by noting recurring themes, making contrasts and comparisons between and among the health behavior themes identified, and counting the themes that emerged from the data. Counting facilitated analysis of the distribution of the data.

In testing or confirming the findings, the number of cases was adequate; however, some theme categories were weakly represented. This was not regarded as particularly problematic, because the aim was to identify a broad spectrum of health behavioral themes that caregivers would report in an open-ended format. As a safeguard against researcher effects, feedback from an expert allowed for comparison of the ratings. Areas of uncertainty were noted in the open-ended question; however, consensus was achieved through repeated discussions.

Standards for establishing the quality of conclusions involved a series of tactics (Miles & Huberman, 1994). Multiple interviewers incorporated comparable data collection protocols. Respondents were prompted by the same question. Rechecking indicated that consistency was maintained by the interviewers in the manner in which they asked the open-ended question. Expert review was in place

in which coding checks demonstrated a high degree of inter-rater agreement. Data are well-linked to the categories of prior or emerging theory. The themes are systematically related. Rules for confirmation and/or coding instructions for categorizing health behavior were made explicit (see Appendix G, page 175). Areas of uncertainty were identified and consensus reached by the investigator and expert judge. The methods and procedures for examining the open-ended question could be replicated, and are described in enough detail to permit comparisons with other samples.

Research Question 4: "What is the effect of age, gender, race, and length of caregiving on perceived health status, and in turn, what is the effect of perceived health status on health promoting behaviors in caregivers of impaired elders?" is answered below based on two multiple regression analyses. Age and gender made significant independent contributions in perceived health status, but not race and length of caregiving (see Table 23, page 131). Also, as can be determined from Table 24, page 133 below, there was a significant, but weak relationship (Beta = .15, $p < .05$), indicating that perceived health status is a determinant of health promoting behaviors in Black and White caregivers in this study. Findings that resulted from the two regressions are demonstrated in the tables that follow.

Table 23

Multiple Regression Analysis of Perceived Health Status on Age, Gender, Race, and Length of Caregiving in Black and White Caregivers of Impaired Elders

Independent Variables	Beta	t	p
Age	-.11	-2.14	.03
Gender	.10	2.00	.05
Race	-.07	-1.44	.15
Length of Caregiving	-.03	-0.58	.56
Constant	---	19.80	.00

(Adjusted R-Square = .017; F = 2.70; df = 4, 390; p = .0305)

Explaining Perceived Health Status. The influence of perceived health status on age, gender, race, and length of caregiving was first examined. Together, these variables explained 1.7% of the variance in perceived health status, with age and gender making a significant independent contribution, but not race or length of caregiving.

Standardized betas are reported above. Age is measured as a continuous variable, resulting in a negative value (Beta = -.11, $p < .05$). Therefore, caregivers' age is inversely related to caregivers' perceived health status. On the other hand, gender is positively related to perceived health status (Beta = .10, $p < .05$). Gender was

dummy coded, such that female caregivers (N = 331) were coded as 0, and male caregivers (N = 64) were coded as 1. Race was also a dichotomous variable that was dummy coded. Black caregivers were coded as 1, and White caregivers were coded as 0.

While the estimated effect sizes for age and gender are small (-.11 and .10, respectively), the large number of subjects (N = 395) enhanced the probability of obtaining significant results at an alpha of .05 in this analysis (Lipsey, 1990). The power for this analysis is .52, based on the sample size, a two-tailed alpha = .05, and Beta = .10 per Table F.2 (Cohen & Cohen, 1983, p. 529). Had the ES been slightly larger, e.g., .20, the power would have increased to .98, with all other parameters being equal.

Cohen and Cohen (1983) further state, "When there is reason to believe that the population ES is small (i.e., r = .10), rather large values of n are required--for alpha = .05 and 1 - Beta = .80, n must be n* = 783 (Appendix Table G.2)..." (p. 61). Because the statistical test of the null hypothesis: r = 0 is simultaneously a test of the null hypothesis: Beta = 0, the power analysis for Beta may be carried out by means of its associated r.

Table 24

Multiple Regression Analysis of Health Promoting Behaviors on Perceived Health Status in Black and White Caregivers of Impaired Elders

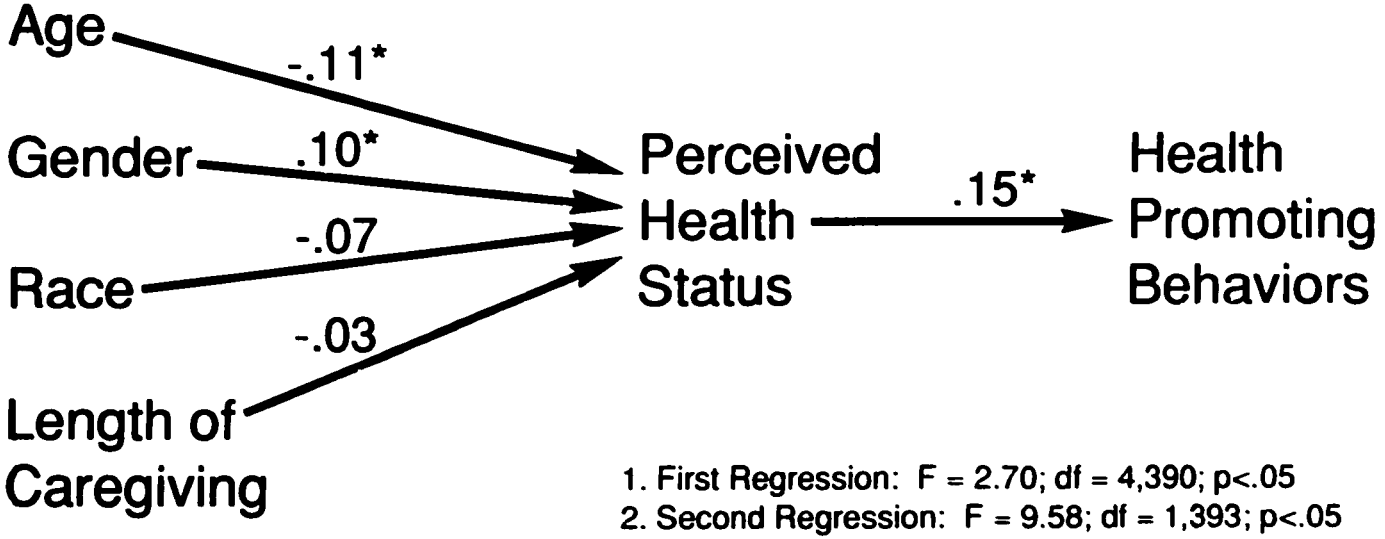
Independent Variables	B	t	p
Perceived Health Status	.15	3.10	.00
Constant	---	14.7	.00

(Adjusted R-Square = .021; F = 9.58; df = 1, 393; p = .0021)

Explaining Health Promoting Behaviors. There was a statistical significance in the influence of perceived health status on health promoting behaviors. When the variable health promoting behaviors was regressed on perceived health status of Black and White caregivers in the study, 2.1 percent of the variance was explained.

Two regressions were done in the hierarchical regression diagram (see Figure 3). However, the R-squares are very low in both equations, and only statistically significant because of the large number of subjects. These results suggest an adequate fit of the conceptual model for the study that can be discussed in terms of residual analysis.

Figure 3: Standardized Betas Linking Perceived Health Status and Health Promoting Behaviors in Caregivers



1. First Regression: F = 2.70; df = 4,390; p<.05
2. Second Regression: F = 9.58; df = 1,393; p<.05

Note: *p<.05

Statistical assumptions for the fourth research question were tested in SPSS-PC for violations based on multiple regression analysis. Violation of assumptions for normality, linearity, homosedasticity, and independence of residuals were examined. Histograms of the standardized residuals were examined for their symmetry about zero (Ott, 1988), in order to test the assumption of normality of sampling distributions.

A second means to detect non-normality is through the use of a normal probability plot of the residuals. If the residuals are normally distributed, the normal probability plot will approximate a straight line (Ott, 1988). Even after removal of the outliers [the 15 year-old caregiver and the female who had been caring for her mother for 40 years], the assumption of normality may still be violated in this regression. That is, the normal probability plot did not approximate a straight line when perceived health status was regressed on age, gender, race, and length of caregiving. When the variable of health promoting behaviors was regressed on perceived health status, the standardized residuals did approximate a straight line. Thus, the residuals are normally distributed for the second regression, but not the first regression.

Scatterplots for both dependent variables were evaluated for each independent variable to examine the

assumption of a linear relationship between predicted values and residuals for the dependent variables. None of the plots revealed severe deviation from a linear relationship. Examination of the standardized scatterplots of residuals versus the predicted dependent variables indicated no apparent pattern exists which violates the assumption of homoskedasticity. This would suggest that the variance of the error term is constant for all values of the independent variables (Verran & Ferketich, 1984).

A Durbin-Watson statistic was calculated in SPSS-PC for the dependent variables in the equation, in order to test for violation of the assumption of independence of errors. When there is no serial correlation, the expected value of this test statistic is approximately 2.0, with a range not less that 1.5 and not more than 2.5 (Ott, 1988). The values obtained were within these critical values, suggesting the residuals terms are not correlated.

The histograms of the standardized residuals were symmetrical about zero, indicating that the residuals were normally distributed. Linearity was determined by the plots between the dependent variable and each of the independent variables, as well as the significant R-square of the regression equations. Examination of the standardized scatterplots of residuals versus the predicted

dependent variables indicated no apparent pattern, which would suggest the assumption of homoskedasticity has not been violated. Also, the variance of the error term is assumed to be constant for all values of the independent variables. The final assumption that the independent variables are not correlated with the error term. The correlations of standardized residuals with each independent variable in this analysis is zero.

Exploratory Analysis

Race and Perceived Health Status

While the results in Table 25 are not statistically significant, patterns in perceived health status of Black and White caregivers by gender can be observed. White male caregivers most frequently perceived their health as excellent. Black females (N = 117) reported the highest percentage of "poor" health. In contrast, none of the Black male caregivers (N = 19) reported poor health. White males (N = 45) reported excellent health at twice the rate of Black females (N = 117). Black females reported poorer health more frequently than did any of the other three caregiver groups, i.e., Black male, White male, or White female. These results must be interpreted with caution, however, because of the unequal sample sizes in the subgroups.

Table 25

Number and Percent of Reported Perceived Health Status by Race and Gender for Black and White Caregivers of Impaired Elders

Health Ratings	Black Males (N=19)	Black Females (N=117)	White Males (N=45)	White Females (N=214)
Excellent	26.3%	20.5%	40.0%	25.2%
Good	57.9%	51.3%	37.8%	48.6%
Fair	15.8%	20.5%	20.0%	22.9%
Poor	00.0%	7.7%	2.2%	3.3%

Race and Health Promoting Behaviors

A further breakdown of the caregivers who scored on the Health Promoting Behaviors Questionnaire, examining both gender and race can be observed in Table 26 below. This table shows that White female caregivers reported higher percentages of adequate sleep, eating breakfast, alcohol abstinence to moderate consumption, and not smoking, but lowest on snacking between meals. Black male caregivers scored highest on not snacking between meals, exercise, and not being told they were overweight, but lowest on adequate sleep, eating breakfast, and drinking and smoking behavior.

While Black female caregivers' scores were comparable to White females on drinking behavior, Black females have the lowest percentages on exercise and not being told they

were overweight. This means Black females exercise less and are more frequently told that they are overweight. White male caregivers did not score highest or lowest on any health behaviors.

General patterns of health promoting behaviors of Black and White caregivers were observed earlier. However, when health patterns of male and female caregivers who scored on the Health Promoting Behaviors questionnaire were explored more closely in the two racial groups, it appeared that White female caregivers reported higher percentages of adequate sleep, eating breakfast, abstinence to moderate alcohol consumption, and not smoking, but lowest percentages on snacking between meals. Black male caregivers (N = 19) scored highest on not snacking between meals, physical activity, and not being told they were overweight, but lowest on adequate sleep, eating breakfast, and drinking and smoking behavior.

While Black female caregivers scored similarly with White female caregivers on alcohol consumption, these Black women had the lowest proportion on physical activity and not being told they were overweight. Therefore, Black women report exercise less frequently and are more likely to be overweight when compared with other subjects in the sample. It appears that Black caregivers, regardless of

gender, participate in higher risk health practices than do their White counterparts.

Table 26

Number and Percent of Caregivers who Scored on the Seven Health Promoting Behaviors Questionnaire by Gender and Race

Health Behaviors	Black Males (N=19)	Black Females (N=117)	White Males (N=45)	White Females (N=214)
7-8 Hours Sleep	21.1%	40.2%	40.0%	55.6%
Eat Breakfast	47.4%	48.7%	57.8%	58.9%
Snacking	68.4%	65.8%	66.7%	57.9%
0-2 Drinks	68.4%	94.9%	77.8%	95.8%
Non-Smoker	52.6%	67.5%	64.4%	75.7%
Exercise	89.5%	67.5%	77.8%	79.0%
Not Overweight	78.9%	41.9%	60.0%	47.7%

Age and Perceived Health Status

In the regression analysis that examined relationships in the conceptual model for the study, age was significantly related to perceived health status (Beta = -.11, $p < .05$). On closer examination certain patterns became apparent. For example, most caregivers, regardless of race, reported their health status was "good". However, using Stone, Cafferata and Sangl's (1987) four age groupings, young (15-44); middle (45-64); young-old (65-74); and old-old (75 and more), some expected and some unexpected patterns can be observed. Of the caregivers who rated their health status as "poor", old-old caregivers were four times as likely to report "poor" health compared

with young caregivers. Yet, of the caregivers who rated their health status as "excellent", young caregivers and old-old caregivers were equally likely to report "excellent" health status. Of the caregivers who rated their health as "fair", young-old caregivers were twice as likely to rate their health as fair compared with the young caregivers.

Table 27

Age Groupings of Black and White Caregivers and Percentage of Reported Perceived Health Status

Age of Caregiving	15-44 yrs. (N = 113)	45-64 yrs. (N = 197)	65-74 yrs (N = 68)	75>yrs. (N = 17)
Excellent	29.2%	24.4%	22.1%	29.4%
Good	54.0%	46.7%	45.6%	47.1%
Fair	14.2%	23.9%	29.4%	11.8%
Poor	2.7%	5.1%	2.9%	11.8%

Age and Health Promoting Behaviors

Variability was also noted in the age groupings and reported health promoting behaviors of caregivers in the sample (see Table 28 below). In examining health promoting behaviors in old-old caregivers, eating breakfast almost daily, abstinence to moderate drinking, and not smoking were reported 100% of the time. These results must be

interpreted cautiously, because the size of the old-old age group (N = 17) is quite small.

Further, the old-old group is almost three times more likely to eat breakfast compared with the young caregivers (N = 113), and twice as likely as the middle-aged caregivers (N = 197). Likewise, young caregivers report they presently smoke cigarettes 40 percent of the time, compared with old-old caregivers who did not report smoking at all. Young caregivers, however, reported exercise activities 82 percent of the time, in contrast to the old-old caregivers who reported exercise only 53 percent of the time. In conclusion, age seems to affect the health promoting behaviors reported by caregivers, in particular, eating breakfast, smoking behaviors, and exercise.

Table 28

Age Groupings of Black and White Caregivers and Percentage who Scored on Health Promoting Behaviors Questionnaire

Age	15-44 yrs. (N = 113)	45-64 yrs. (N = 197)	65-74 yrs. (N = 68)	75> yrs. (N = 17)
Adeq Sleep	46.9%	47.2%	48.5%	52.9%
Breakfast	31.9%	47.2%	72.1%	100.0%
No Snacking	61.9%	59.9%	67.6%	58.8%
0-2 Drinks	83.2%	93.9%	100.0%	100.0%
Non-Smoker	57.5%	72.1%	82.4%	100.0%
Exercise	82.3%	74.6%	75.0%	52.9%
Not Overwt.	55.8%	44.7%	48.5%	52.9%

Length of caregiving did not appear to affect perceived health status, nor did it affect health promoting behaviors reported by caregivers. Little variability was observed in perceived health status and health promoting behaviors as related to length of caregiving.

Post Hoc Multiple Regression Analyses

A second series of regressions was done to determine how much variance perceived health status could explain, controlling for age, gender, race, and length of caregiving. The following results were revealed.

Table 29

Multiple Regression Analysis of Perceived Health Status on Age, Gender, Race, and Length of Caregiving in Black and White Caregivers of Impaired Elders

Independent Variables	Beta	t	p
Age	-.11	-2.15	.03
Gender	.09	1.83	.07
Race	-.07	-1.44	.15
Length of Caregiving	-.03	-.57	.57
Constant	---	19.8	.00

(Adjusted R-Square = .051; F = 2.54; df = 4, 390; p = .0398)

Table 30

Multiple Regression Analysis of Health Promoting Behaviors on Age, Gender, Race, Length of Caregiving, and Perceived Health Status in Black and White Caregivers of Impaired Elders

Independent Variables	Beta	t	p
Age	.24	4.90	.00
Gender	-.07	-1.38	.17
Race	-.11	-2.18	.03
Length of Caregiving	.06	1.26	.21
P. Health Status	.18	3.71	.00
Constant	---	6.51	.00

(Adjusted R-Square = .094; F = 9.19; df = 5, 389; p = .0000)

Explaining Health Promoting Behaviors. In a second series of regressions, the increase in adjusted R-square that perceived health status can explain in health promoting behaviors was .08 percent over and above age, gender, race, and length of caregiving. Although the analysis described here is not part of the conceptual model designed for this study, this regression was done to demonstrate how much variance can be explained by perceived health status when controlling for age, gender, race, and length of caregiving.

In summary, the findings of the study have been delineated based on secondary analysis. The four research

questions have been answered, as well as an examination of the assumptions of the statistical tests used to answer those questions. This chapter has provided a description of the sample, including an in-depth analysis of self-identified ethnicity contrasted with interviewers' racial classification of subjects.

Of utmost importance, a significant relationship was found between perceived health status and health promoting behaviors in Black and White caregivers. Also, in examining the conceptual model for the study, age and gender made significant independent contributions in the hierarchical regression diagram, but race and length of caregiving did not. While significant relationships were found in these variables, the R-squares were very low in the two regressions, suggesting a poor fit of the model. The assumption of normality of sampling distributions may have been violated based on residual analysis.

Perceived health status was not significantly different in the two racial groups, although most caregivers evaluated their health as "good". The total number of health promoting behaviors was significantly different for Black and White caregivers. In addition, 16 health promoting behavioral themes emerged from the qualitative data in the open-ended question. Some health behavioral themes were different for Black and White

caregivers, including 'follows medical plan', 'spiritual', 'avoidance of harmful things', and 'keeping active/staying busy'.

The last chapter summarizes pertinent findings and discusses the implications of those findings. In addition, recommendations are made for future research in terms of what needs to be done to further the aims of this study.

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Caregiver health and its consequences are a major concern for nursing. Many studies have examined health promoting behaviors (Walker, Volkan, Sechrist & Pender, 1988; Duffy, 1993), but few studies exist on health promotion of caregivers. This study examined the effects of age, gender, race, and length of caregiving on perceived health status and health promotion behaviors in Black and White informal caregivers of impaired elders. A significant relationship was found between perceived health status and health promoting behaviors of Black and White caregivers. Most caregivers rated their health as good. In addition, the total number of health promoting behaviors was significantly different between Blacks and Whites.

The research design was secondary analysis of an existing data set, based on a conceptual model linking perceived health status and health promoting behaviors. A sample of 136 Black and 259 White caregivers was recruited from Northeastern Ohio through random digit dialing, who were subsequently interviewed face to face. Eligibility criteria were English speaking caregivers, who provided unpaid assistance or care, for a minimum of five hours a week, to an impaired older person 60 years of age or older

living in the community. The adequacy and integrity of the original data set was determined and the data were valid. Test-retest reliability was established for the seven-item Health Promoting Behaviors questionnaire and the open-ended question, "In general, what do you do to stay healthy?" based on two-to-four week intervals for data collection. Data were analyzed using t-tests and multiple regression analysis. The open-ended question was answered using content analysis.

Discussion of Pertinent Findings

The major findings in this study were: (1) there was no difference in perceived health status in the two racial groups; (2) most caregivers in the study rated their health as good; (3) the total number of health promoting behaviors were significantly different, with Whites reporting a higher frequency; (4) the overall fit of the conceptual model was adequate, and a significant relationship was found with perceived health status predicting health promoting behaviors of caregivers; (5) caregivers were interested in their health, as evidenced by self report; and (6) the view that accepted racial categories of 'Black' and 'White' have no culture salience was supported. A lack of significance between Black and White caregivers in perceived health status was an unexpected finding. Yet, White caregivers participated in

more health promoting behaviors than Black caregivers, suggesting small variability in perceived health status. Or, there are other factors that influenced this result.

The finding that perceived health status influences health promoting behaviors also supports Pender's (1987) model, which posits that perceived health status is a determinant of the frequency and intensity of health promoting behaviors. Pender (1987) believes the higher the perception of health, the more likely an individual is to engage in health promoting behaviors.

Linkages in the conceptual model for the study were examined based on regression. While all the proposed relationships in the model were not supported, age and gender were significant determinants of perceived health status in caregivers in this sample, but race and length of caregiving were not. The R-squares were low in the regression, suggesting a poor fit of the model in general. This indicates that some other variable(s) not included in the model must account for the variance in perceived health status of caregivers.

The effect of race on perceived health status was not significant in the regression. This is believed to be true, in part, because no statistical difference was found in the means for the two racial groups on perceived health status. It may also be conjectured that the measure was

not sensitive enough to detect individual differences of health perceptions in the two racial groups. For example, in the 22-item General Health Rating Index (GHRI) used as a measure of perceived health status, Davies and Ware (1976) found that the GHRI was sensitive to individual differences in disease status, limitations in physical and role functioning due to poor health, acute physical and psychosomatic symptoms, and mental health in a sample of 1200 subjects aged 14 to 67 years of age.

The lack of statistical significance in the t-test measuring perceived health status in the two racial groups perhaps resulted from small variability in the measure. But, in addition, the inability to achieve statistical significance might also support the anthropological view that the accepted categories of 'Black' and 'White' in the United States' science and society, indeed, have no cultural salience. Thus, racial categories may not inform us, and therefore cannot be used as predictors of action (Gaines, 1994).

Yet, an extensive effort was made to determine the ethnic identity of the 136 'Black' and 259 'White' subjects in the study. In all probability, 'Blacks' were southern and northern-born individuals of very heterogeneous ancestry, some of whom may be ethnically Puerto Rican or other Caribbean (Gaines, 1994). In addition, while there

were a variety of European cultural traditions, there was to be found no 'White' culture with a particular history. Thus, persons classified under the non-specific 'White' label in this study represented a variety of distinct ethnic groups with distinct cultural orientations. The concept of race may prove to be a less useful model than that of culture and ethnicity for understanding differences in perceived health status and health promoting behaviors. The original data set, however, was based on race.

Gaines (1994) has argued that racial categories cannot inform us of culture or behavior, and thus cannot be used as predictors of action. The popular notions of "race" do not correspond to biological or cultural reality. Because the large number of different ethnic groups were concealed by the labels "Black" and "White", future research can make a transition to the newer conceptual perspective, investigating cultural identities of subjects instead. It is believed that information on origins of ancestry, religious affiliations, language, values, and beliefs would provide a richer source of knowledge for understanding behaviors, than does the more common exploration of traditional racial categories (Gaines, 1994).

Likewise, the length of caregiving, a continuous variable which was conceptualized in this study as a marker of stress, was not significant in the regression, even

after removal of the outlier [the female caring for her mother for 480 months]. This variable may not be as strong a predictor of perceived health status as initially speculated (Pearlin, et al. 1990). The sample criteria alone, that is, providing a minimum of five hours of care per week to an impaired elder, may negate the long-term stressful effects compared with relentless 24-hour care to a severely impaired elder. Thus, the data indicate the length of time as caregivers may not have a cumulative negative influence on perceptions of health, suggesting some other variable(s) must explain perceived health status in caregivers, such as burden (Zarit, Orr & Zarit, 1985) or burnout (Pearlin, et. al (1990).

Indeed, McDonald, Fink, and Wykle (1994) found a significant, negative relationship between Zarit's burden interview and perceived health status in a subsample of 210 women from the original dataset used for this study (54 Black and 156 White caregivers). McDonald, et. al (1994) conceptually defined burden as a measure of stress in their study. In a multiple regression analysis of race, income, education, health promoting behaviors, and caregiver burden, 17 percent of the variance was explained in perceived health status in these women. Of particular importance, caregiver burden made a significant inverse, independent contribution (Beta = -.30, $p < .01$). This

finding suggests that burden may provide a more compelling measure of caregiver stress than the length of caregiving in the present research.

In the same study, race also made an independent contribution (Beta = .13, p = .05) in perceived health status (McDonald, et al. 1994). These findings revealed that the variable of race in female caregivers had more explanatory power in perceived health status than did race in the present study when gender was combined. This suggests there may be gender differences in the two racial groups. However, in order to test this assumption, a larger sample of male caregivers is needed, in particular, a sample larger than the 19 Black males in the present study.

While primary or secondary stressors of caregiving (for example, burnout) may have been more influential as a determinant of perceived health status in the caregivers than was the length time providing care (Pearlin, et. al. (1990), a number of additional explanations may be offered. Some plausible explanations include, but are not limited to (1) whether the care recipient lives outside the home rather than with the caregiver, (2) cultural factors, or (3) it may have to do with how well the caregivers use services. Because only 9.9% of caregivers reported spousal care recipient relationships, it may be conjectured that

most caregivers live outside the home of the care recipient. Future studies are needed to examine the effect of shared vs. separate households on perceived health status, and subsequent health promoting behaviors.

Another relevant finding was the significant difference in the total number of health behaviors reported on the Health Promoting Behavior questionnaire in the two racial groups. This difference was unexpected in light of the fact that no difference was found in the perceived health status of Black caregivers compared with Whites. Because racial disparity in perceived health status was not evidenced, perhaps the groups differed on some other variable(s) not present in the model such as household income. Household incomes for Black caregivers was significantly lower than Whites, although the income of the sample as a whole was relatively high. At least 20 percent of the sample earned $40,000 or more annually, theoretically permitting more access to health services, or a higher number of health promotion practices than might typically be expected.

Further scrutiny of the racial and gender patterns in perceived health status and health behaviors in subjects who scored on the Health Promoting Behaviors questionnaire, suggested there may be differences in caregivers in the two racial groups. For example, several fascinating patterns

were observed. Black female caregivers reported they were more often overweight and exercised less than did the other three groups (i.e., Black male, White male, White female). They also reported the "poorest" health status. White women reported adequate sleep, and eating breakfast, and an alcohol consumption comparable to Black female caregivers. Black male caregivers, on the other hand, reported a higher percentage of exercise, less snacking between meals, and were not overweight. Their sleep, however, was inadequate, and they smoked and drank more than their White counterparts. The White male caregivers demonstrated no particular patterns on any of the health promoting behaviors, but they tended to report excellent health more frequently than the other groups. It appeared that Black caregivers, regardless of gender, participated in higher risk health practices than did their White counterparts. These data reveal patterns that may not only have implications for practice, but for further nursing investigation as well.

Finally, a critical aspect of the study was what caregivers report that they do to stay healthy. The data from the open-ended question indicated that caregivers are indeed interested in promoting their own health. Data examining this question were based on techniques of content analysis, involving the quantification of narrative,

qualitative material (Polit & Hungler, 1995). The purpose of this question was to enrich the findings of the study, allowing for greater understanding of the broader psychological or social dimensions of health behaviors in caregivers, which the Health Promoting Behavior Questionnaire does not address.

Caregivers are not only concerned about their physical health, but as indicated in their responses, emotional, psychological, and spiritual health for some seemed equally important. Responses such as "take time for mental relaxation", "usually having a good disposition helps me", "manage stress by harmonizing", "I have a very active spiritual life" suggest that caregivers' experiences of increased well-being can then be used to reinforce the value of good health, promoting healthier lifestyles despite caregiving demands.

Surprisingly, only 34 instances of spirituality were reported by the 395 caregivers in this study, and as expected, a higher percentage of Blacks reported spirituality than did White caregivers, which is supported by other studies. Wykle and Segall (1991) found that prayer, faith and/or religion was the single most important strategy used to deal with caring for a confused relative in their study. Sixteen (80%) of the Black subjects used this response, while none of the White subjects reported

similar coping behaviors. Additionally, a major finding in Segall and Wykle's (1988-1989) study of the Black family's experience with dementia was that Black caregivers of all ages use religious faith as a way of coping with the stresses of caregiving.

The frequency and intensity of health promoting behaviors can be determined from caregiver responses to the open-ended question. Some caregivers concentrate their health promoting practices in one area, while others reported a variety of activities. A unique health behavioral theme that emerged from the data was "help seeking", in which six (1.5%) caregivers described "soliciting or accepting help", presumably in their caretaking roles. Also, volunteering or doing for others was mentioned by 16 (4.1%) of the caregivers. What is remarkable is that time can be found by caregivers to do for others, in light of their caregiving demands and responsibilities. In spite of caregiving, some caregivers manage to take time for themselves as is the case of the caregiver who reported, "I ride my bicycle about 150 miles a week".

Further, when caregivers' views of health promoting behaviors are compared and contrasted with the general population, many more similarities than differences surface, particularly in older adults. A striking parallel

was noted in Brown and McCreedy (1986), and Brody's (1985) work, in which spiritual, mental, psychological and social well-being, physical exercise, nutrition, and visiting health professionals were frequently mentioned. One other study reported "self-discipline to do things in moderation" as a way to promote health, (Maloney, Fallon & Wittenberg, 1984), similar to this study. However, safety practices, including seat belts in automobiles, smoke detectors, and avoidance of environmental hazards such as air pollution and contaminants reported by Harris and Guten (1979), were not mentioned in this study.

In relation to validity of self-report, several issues surface regardless of secondary analysis. The possibility of exaggeration of responses exists because of social desirability. Also, persons trying to impress the interviewer may introduce bias in the results. Assumptions about what the words meant is complex because "messages do not have a single meaning, nor are meanings necessarily shared" (Krippendorff, 1980, p. 22).

Because the open-ended question directly followed the Health Promoting Behaviors Questionnaire in the data collection instrument, it may be that the response set biased the health behaviors reported by caregivers, resulting in more attention to "physical aspects" of health behaviors. Also, the manner in which the question was

phrased may have been influential in obtaining a narrower response set. Had the question been re-phrased, "What do you do to stay physically and mentally healthy?", a broader range of responses may have been forthcoming. Or, it may be that individuals associate physically-oriented activities with health promotion more frequently than they do other types of health promoting activities.

Implications for Nursing and Nursing Research

The goal of the study was to increase nursing knowledge development in determining those factors that influence health promoting behaviors of caregivers in two racial groups, and to examine whether the relationship of perceived health status and health promoting behaviors holds for caregiver populations. Although all of the proposed relationships were not significant in the model, the study has important implications for both clinical nursing practice and further nursing research.

This study provided an assessment of lifestyle practices of Black and White caregivers which can be utilized by nurses. The findings [congruent with prior theory] are accessible to potential users and stimulate "working hypotheses" for future research. In addition, content analysis as a research technique will allow replicable and valid inferences to emerge from data to

their context (Krippendorff, 1980). The scope and boundaries of generalizations in this study can be made to informal Black and White caregivers of impaired elders in large metropolitan cities which should be useful to nurses.

Further nursing research might focus on qualitative studies, using a phenomenological approach. Such questions as "What does it mean to be healthy to you?", or "What things do you do to stay healthy?", may provide a more in-depth description of what "healthy" is to the subjects. Using phenomenological methods provides for a redistribution of power, in which subjects are considered co-researchers in a position of power (Debera Thomas, personal communication, January 20, 1995). Social desirability may be reduced because the "co-researchers" have an opportunity to know and better understand one another in the relationship. Also, because of extensive contact with people in preventative care, the nurses' role in ethnography may be an important consideration for future research.

The data suggest a shift in caregiving trends over the past 10 years compared with the national profile (Stone, Cafferata & Sangl, 1987), which could be expected to influence the pattern of care used by older adults. There is an increase in female labor force participation, more adult children caring for parents, and fewer males assuming

the caregiver role. These changes may have important societal implications for policy and economic conditions in shaping the nation's future health agenda for the care of impaired elders.

Since behavioral changes can be very difficult to make, supportive social environments become very important. Examples of the national commitment to health promotion and illness prevention include an expanded network of education, community, employer, and government support (National Health Promotion and Disease Prevention Objectives, 1991). Worksite health programs of smoking cessation, exercise, and stress control, community groups, church-provided support, and self-help groups, as well as health facilities screening and patient education are key to facilitating healthy lifestyle changes in American adults, many of whom are caregivers.

Clinical nursing practice can benefit from the racial and gender patterns that emerged from the data, and focus on those behaviors that pose a threat to caregiver health, both in the short and long run. Nurses can reinforce those behaviors that promote exemplary emotional and physical health, increasing the ability of caregivers to care for impaired elders in the community for extended periods of time, yet maintain optimal health while doing so. The data suggest health teaching in the areas of smoking cessation,

weight control, increased physical activity and exercise programs, and better sleep habits for Black caregivers may be warranted. Even in late life, changing certain risk behaviors into healthy ones can improve heath and reduce the likelihood of disability (Healthy People 2000, p. 587).

Well-designed, systematic studies provide evidence for nursing knowledge development on which clinical practice is based. Basic research on factors influencing health promoting behaviors of caregivers is in its infancy, and examination of the variable of caregiver race in relation to health promoting behaviors is even more rudimentary. More research is needed to understand uniqueness and similarities in ethnically diverse groups in order to foster more affordable, culturally sensitive programs. The study suggests that the accepted categories are misleading, and may pose problems for nursing research and practice.

Limitations of the Study

A limitation of this study was that the measure of Health Promoting Behaviors focused on assessment of physical aspects of caregiver health, to the exclusion of broader psychological or societal issues of health. While caregivers' responses to the open-ended question about health behaviors addressed some of these broader issues, severe restriction in the response set was noted. Caregivers tended to associate physically-oriented

activities with health promotion more frequently than they did other types of health promotion activities.

Cross-sectional data limited the relationships among variables, which were viewed as associational rather than causal in nature. Future research can examine longitudinal studies exploring causal modeling, which can predict factors effecting perceived health status and health promoting behaviors over time.

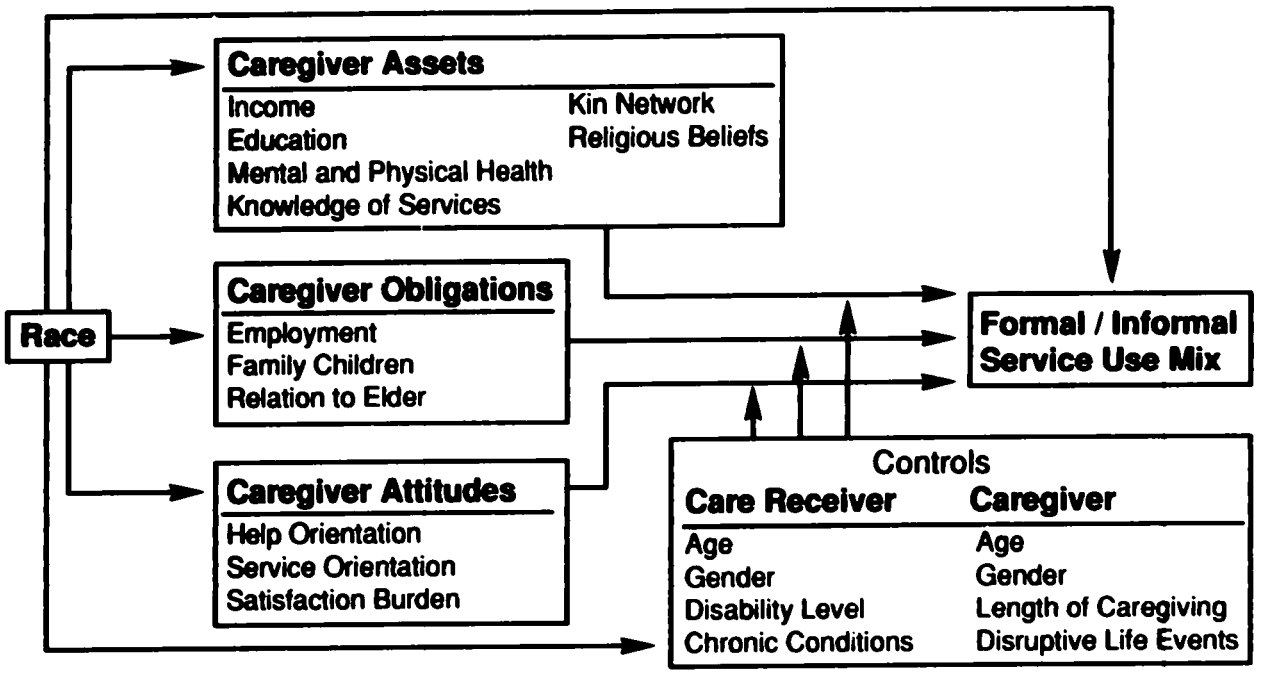
Another limitation of the study was the reduced proportion of male caregivers, particularly among Blacks, totaling only 19. While caregiving is primarily the province of women, the national profile contained approximately 12 percent more male caregivers than did this study (Stone, et. al (1987). Because of recruitment through random digit dialing, selection bias may exist for potential Black male caregivers who were not so willing to become a subject or participate in research. The small proportion of male caregivers limits generalizability of the findings to this segment of the population, and further warrants replication of the study which systematically recruits male caregivers in general, and minority males in particular.

Recommendations for Future Study

Based on the results of this research, the following suggestions are recommended for further study: (1) use of

multiple, more objective measures for identifying the broader dimensions of health promoting behaviors in caregivers, with better methods for data validation; (2) qualitative studies of the lived health experience of caregivers would provide an added dimension; (3) replication, systematically recruiting more males to equalize the proportion of both genders, and in particular Black male caregivers; (4) health promotion studies that address cultural identities rather than the traditional racial categories; and (5) more longitudinal studies exploring health promotion behavioral patterns of caregivers over time, and the effect of shared vs. separate households for the caregiving experience.

Model for Black vs. White Caregivers' Formal / Informal Service Use



Source: Study funded by NINR Grant No. RO1NR03381, titled "Black vs. White Caregivers: Informal / Formal Service Use"

Control, Independent and Dependent Variables
Black vs. White Caregivers' Formal / Informal Service Use

Control variables

Care Receiver Characteristics

- Age
- Gender
- Disability Level
- Chronic Condition

Caregiver Characteristics

- Race
- Age
- Gender
- Length of Caregiving
- Disruptive Life Events

Independent variables

Caregiver Assets

- Annual Family Income
- Kin Network
- Mental Health
  - Psychological Distress / Depression
- Physical Health
  - Self-assessed Health
    - Self-perceived Sickness
- Education
- Knowledge of Services
- Religious Beliefs and Practices

Caregiver Obligations

- Employment
  - Hours / Type
- Family / Children
  - Marital status
  - Number of children in home / in community
- Relation to Elder

Caregiver Attitudes

- Help Orientation
- Service Orientation
- Satisfactions / Burdens

Dependent variable

Mix of Formal / Informal Service Use

Source: Study funded by NINR Grant No. RO1NR03381, titled "Black vs. White Caregivers: Informal / Formal Service Use"

Appendix C

Letter to Potential Subjects Regarding the Original Study

[Date]

Dear Mr. John Doe,

Recently, you or someone you know spoke with [name of researcher] from the School of Nursing at Case Western Reserve University about a study concerning caregiving for older persons. As people today live longer, we need to know more about what happens when they can no longer take care of themselves. In particular, we want to know how people make decisions, use services, and otherwise manage their responsibilities. We would like to schedule some time for an interview with you so we can assist caregivers in making the most of what's available to them to make their jobs easier.

The interview will last about 1 hour and 15 minutes. To thank you for taking the time to talk with us, we will give you $10 for the first interview. If the interview is to your satisfaction, we will talk with you about possible follow-up interviews for which you will also be paid.

Your experiences as a caregiver are important to the success of this study. Your help will allow us to get the most accurate picture of what is involved in caring for a chronically ill older person.

An interviewer will be calling you in the next couple of weeks to arrange a time and place at your convenience. We hope you'll join us in our project and look forward to your participation. If you have any questions, please feel free to call me, the project coordinator, at 368-3083.

Sincerely,

May Wykle, PhD, RN, FAAN
Principal Investigator

Loretta Constantino, MA
Project Coordinator

Appendix D

Letter to Subjects Who Refused Participation in the Study

[Date]

Dear Ms. Jane Doe,

Recently you were contacted by [name of researcher] from Case Western Reserve University about participating in a study on ways to help caregivers. While we apologize for the intrusion, we feel we must tell you again just how important you can be to this project. Through our selection process, you were chosen to represent many other caregivers in Cuyahoga county and are extremely difficult to replace. So please won't you reconsider and participate in our study? The interview will only take an hour of your time, for which you will receive $10.00.

A project staff member will be calling you in the next week to see if you might change your mind.

Thank you,

May Wykle, PhD, RN, FAAN
Principal Investigator

Loretta Constantino, MA
Project Coordinator

APPENDIX E

Letter to Respondents Who Participated in the Test-Retest of the Health Promoting Behaviors Questionnaire and the Open-ended Question

September 27, 1994

Name
Address
City, State, Zip Code

Dear Ms. Mr. Mrs...,

Recently, you completed your Time 2 interview for the Caregiver Study of Case Western Reserve University. An important part of conducting any research study is to occasionally double check a small group of the questions for clarity. Consequently, your name was selected as one of the persons to perform this second check. We would like to schedule you for a brief interview so we can double check 24 of the Time2 questions. The interview will last about 10 minutes. To thank you for taking the time to talk with the interviewer, we will give you $5.

This interview is not required and you can refuse participation. However, we hope that you will participate because ensuring the clarity of the questions is important to our accurate recording of your caregiver experiences. This brief interview will not affect the timing of your Time 3 interview or any future follow-up related to the ongoing Caregiver Study.

An interviewer may be calling you in the next 7-14 days to arrange a time and place at your convenience. We hope you'll continue your valuable contributions to our project. If you have any questions, please feel free to call Sandra Picot, PhD., R.N., Caregiver Study team member at 3657-5980 or Loretta Constantino, M.A., Project Coordinator, at 368-3083.

Sincerely,

Sandra J. Fulton Picot, PhD, RN
Caregiver Study Team Member &
Assistant Professor of Nursing

Appendix F

Questions from Original Data Collection Instruction used in This Study

_____
ID NUMBER

INTERVIEWER INFORMATION SHEET

Respondent's Name: _____
Address: _____

Telephone Number: _____

Appointment Time: _____ AM PM
Date: _____

[Start Time: _____AM/PM]

_____
ID NUMBER

I'm going to ask you a number of questions that are designed for many kinds of people, but it's important that each person answer them all.

Do you have any questions?

[ANSWER ANY QUESTIONS R MAY HAVE UNTIL THERE ARE NO FURTHER QUESTIONS.]

Okay, then let's start.

1. How would you say your health has been in the past month -- excellent, good, fair, or poor? **[CIRCLE ONE]**

Excellent.....4
Good.....3
Fair.....2
Poor.....1

4. Is the person you are caring for a male or female?

Male.....1
Female.....2

5. Is the person you are caring for your:

_____ Spouse _____ Parent
_____ Child _____ Sibling
_____ Friend _____ Other relative: _____
Specify

6. How old is your **[ELDER]**? _____ years old

CR Functional Status

Now I'd like to ask you some questions about some of the things your [ELDER] might not be able to do alone. It doesn't matter whether or not you are the one who helps your [ELDER]. Please answer YES or NO to the following:

[CIRCLE ONE]

Does your **[ELDER]**...	Yes	No
8. Need help bathing?		
9. Need help dressing?		
10. Need help getting in and out of bed?		
11. Need help walking?		
12. Need help toileting?		
13. Need help eating?		

Now I'd like to know whether helping your [ELDER] has affected your work. First, please tell me:

158. Do you work for pay or on a volunteer basis?

Yes, for pay.....2 **[GO TO #159a]**
Yes, volunteer....1
No.....0 **[GO TO #167 (page 17)]**

159a. How many hours do you work each week? _____
[CODE EXACT NUMBER]

159b. Are these hours flexible?

Yes.....1
No.....0

Health Promoting Behaviors

Now I'm going to ask you some questions about your daily health activities, things that we all do as a part of our daily lives. Some of the questions in this section may not apply to you, but we would appreciate it if you would answer them all anyway.

[CIRCLE ONE]

63. How many hours of sleep do you usually get each night?

Six hours or less.....1
Seven hours.....2
Eight hours.....3
Nine hours or more.....4

64. How often do you eat breakfast?

Almost everyday.....3
Sometimes/once in a while.....2
Rarely or never.....1

65. How often do you eat in between your regular meals?

Almost every day.....3
Sometimes/once in a while.....2
Rarely/Never.....1

66. How often do you drink wine, beer, or liquor?

Never.....0
Less than once per week.....5 **[IF NEVER GO TO #68]**
Once or twice per week.....14
More than twice per week...30

67. When you drink wine, beer, or liquor, how many drinks do you usually have at a sitting (one time)?

None.....0
1 - 2.....3
3 - 4.....7
5 or more.....12

68. Do you smoke cigarettes at the present time?

Yes.....1 **[IF YES GO TO #68a]**
No.....0 **[IF NO GO TO #69]**

68a. How many cigarettes do you smoke a day?

More than 1/2 pack.....2
1/2 pack or less.....1

69. Here is a list of active things that some people do in their free time. How often do you do any of these things? Would you say never, sometimes or often?

	Never	Some-times	Often	
Swim or take long walks	0	2	4	**[CIRCLE ONE]**
Physical exercises	0	2	4	
Active sports	0	2	4	
Gardening	0	2	4	
Fishing or hunting	0	2	4	

70. Have you been told that you are overweight?

Yes.....1
No.....0

74. In general, what do you do to stay healthy?

[OPEN ENDED] _____

Next I'd like to ask you some more questions about your caregiving. In particular...

213. About how long ago did you start helping your **[ELDER]** on a regular basis, say five or more hours a week?

_____months
_____years

We are almost finished. I just need to ask you a few general questions.

232. Are you presently married, widowed, separated, divorced, or have you never been married?

Married.....1
Widowed.....2
Separated.....3
Divorced.....4
Never married.....5

233. What was the last year of school you completed? ____
[CODE ACTUAL NUMBER]

234. Given these amounts of total **annual** or **monthly** income, whichever is easiest for you to remember. Please tell me the letter that matches the income your household receives before taxes.

[HAND R CARD 11]

	YEARLY	MONTHLY
A.	0 - $1,999	0 - $166
B.	$2,000 - $2,999	$167 - $249
C.	$3,000 - $3,999	$250 - $333
D.	$4,000 - $4,999	$334 - $416
E.	$5,000 - $6,999	$417 - $583
F.	$7,000 - $9,999	$584 - $833
G.	$10,000 - $14,999	$834 - $1,249
H.	$15,000 - $19,999	$1,250 - $1,666
I.	$20,000 - $29,999	$1,667 - $2,499
J.	$30,000 - $39,999	$2,500 - $3,333
K.	$40,000 or more	$3,334 or more

[TAKE CARD BACK]

L. Don't Know **[L & M not options on card #11.**
M. Refused **Do not read out loud.]**

and finally,

237. What is your birthdate? (MM/DD/YY) ___/___/___

238. With what ethnic background do you identify yourself? _____

That completes our interview for today. Thank you very much for your time. I have your payment here [HAND ENVELOPE WITH MONEY]. You will be hearing from the project staff in the near future.

[RECORD END TIME: _____ AM/PM]

TO BE COMPLETED AS SOON AS POSSIBLE AFTER LEAVING THE RESPONDENT:

239. Race: Black.....1
White.....2

240. Gender of respondent: Male.....1
Female.....2

Appendix G

Rules for Establishing Behavioral Theme Categories To the Open-Ended Question: "In general, what do you do to stay healthy?" Including Examples for Open Coding

1. FOLLOW MEDICAL PLAN; SEEK PROFESSIONAL HELP
2. TAKE VITAMINS
3. NUTRITIONAL INTAKE
4. REST AND RELAXATION
5. EXERCISE AND SPORTS
6. HOUSEWORK/CHORES/WORK/GARDENING
   -Includes gardening and yard work.
7. MENTAL ACTIVITIES
   - Includes reading, writing, learning things, keeping a positive attitude, and avoiding stress.
8. SPIRITUAL
   - Includes "New Age Spiritual" as in harmonizing, meditation, etc., and more traditional religions.
9. RECREATION AND SOCIALIZING
   - Anything along the lines of leisure, including socializing with more than one person.
10. AVOID HARMFUL/DANGEROUS THINGS--GENERAL
    - Includes (a) not drinking; (b) not smoking; (c) not abusing drugs; and (d) general/other such as wearing a seat belt to avoid injury in a crash (but not diet or anything that would fall into the above categories).
11. KEEP ACTIVE/STAY BUSY
    - Includes staying busy, etc. of a general nature.
12. VOLUNTEERING/DOING FOR OTHERS
    - Includes doing for others, e.g., caregiving.
13. USES MODERATION/COMMON SENSE
    - Includes doing things in moderation using a common sense approach.
14. HELP SEEKING
    - Includes getting help, seeking help, accepting help.
15. CAREGIVER DOES NOTHING
    - Includes statements/comments that indicate specific behaviors are not performed to promote health.
77. NOT APPLICABLE
88. OTHER BEHAVIORS/UNKNOWN
    - Includes behaviors not otherwise classified, such as Holistic Medicine, or statements that do not constitute actual health promoting behaviors.
99. MISSING VALUES
    - Includes situations where the caregiver makes "no comment".

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