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AN ASSESSMENT OF A BLACK COMMUNITY:
STRESS EFFECTS RELATING TO HYPERTENSION

Patricia Edwards Parrish, R.N., B.S.N.

An Abstract Presented to the Faculty of the Graduate School
of the Lindenwood Colleges in Partial Fulfillment of the
Requirements for the Degree of
Master of Science

1990

Abstract

The north side of St. Louis was chosen by the author for many reasons. Perhaps the most important reason is the many stressors within the black community which attribute to health problems such as hypertension. Not only is hypertension more prevalent in blacks than whites, but it is also more severe (Butcher & Allen, Dec. 1989). The vital statistics indicate that the mortality risk in black patients with hypertension is approximately two to six times more than in whites.

Some other reasons for its selection are: This community, according to the Sixth District Police Department (Personal Communication, Jan., 1989), is a drug and crime infested community. Young pregnant mothers with no prenatal care are producing crack and cocaine babies. Last but not least this is the community the author grew up in over 20 years ago, a close-knit group of blacks living in this one section of St. Louis northside, Walnut Park, who shared a common historical, ethnic and cultural background. This project afforded the author to go back and study a new breed of this black community in greater depth and gain additional knowledge as it related to the stress effects relating to hypertension.

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Acknowledgements

So many people deserve thanks for helping me through the arduous task of completing a Master's Thesis. My mother is at the top of the list. She has always been a loving parent and a good listener. I would like to thank my children, Wendell Jr. and Bevin Allison for all their tolerance of late night pick-ups due to late classes and library research. My husband, Wendell Sr., provided me with special words of encouragement. I am truly grateful to my committee who provided me with constant support and understanding.

Table of Contents

	Page
Acknowledgements	iii
List of Tables	v
Chapter 1 Background	
Introduction	1
Review of Literature	3
Statement of Purpose	30
Research Questions	30
Chapter 2 Method	
General Research Approach	30
Operational Definitions	31
Setting	31
Subjects	39
Sampling	40
Instrumentation	41
Data Collection	42
Chapter 3 Results	43
Chapter 4 Discussion and Implications	
Discussion	50
Appendices	
A. Cover Letter to Respondents	55
B. Questionnaire	57
References	63
Vita Auctoris	69

List of Tables

	Page
Interrelations of Causes and Results of	
Poverty and Disease	2
Percent of Households with Diets at Three	
Levels of Quality by Income	6
Death Rate per 100,000 for all Mentions of	
Hypertension Disease 1978 to 1987	9
Ten Leading Causes of Death, by Number	
and Rate, 1986.	11
Birth and Death Information and Rates per	
Per 1,000, 1986	26
Death Rates Under One Year Per 1,000 Live Births	28
Income in 1980 Below Specified Poverty Level	33
Population Statistics, Population by Age	34
Educational Level by Number and Percentage	
of Population, 1980	35
Income Levels by Number and Percentage	
of Population, 1980	36
Crime Statistics, 1988-1989	37
Ethnic Group by Percentage of Population, 1980	38
Occupations by Number and Percentage of	
Population, 1980.	39
Demographic Characteristics of the Study Sample	45
Item Results of the Hypertension Test.	46
Source Used to Gain Health Information	50

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Chapter I

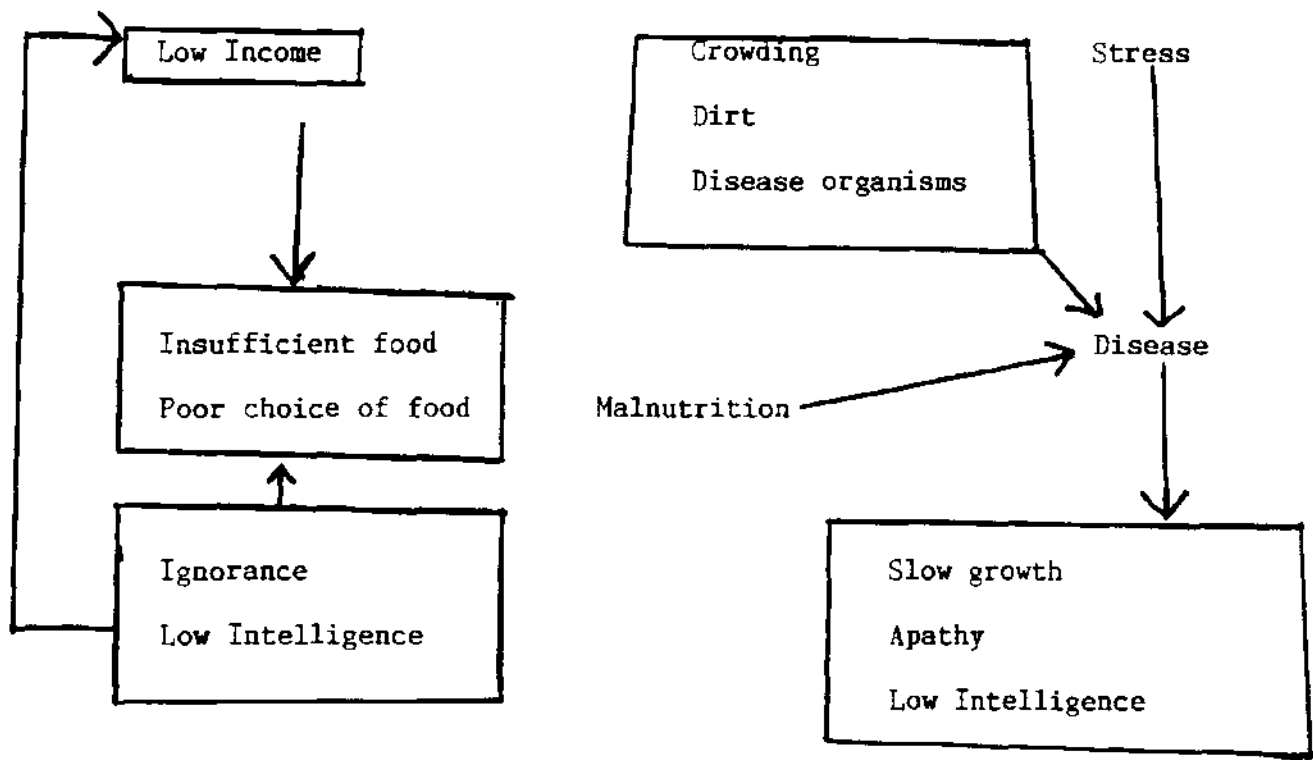
Background

Introduction

Hypertension is a chronic disease that affects an estimated 60 million Americans (Hill, 1979; Levine et al., 1982) and is the nation's number one killer (Merck, Sharp & Dohme, 1989). Hypertension is the major chronic illness of blacks in the United States, with a prevalence rate of 25% to 40% in the adult population (Hosten, 1980). This figure is striking when, comparatively, only one individual in six in the general population has this disease (Eckenfels et al., 1987; Hosten, 1980). Furthermore, as a consequence of the damage it causes to target organs, namely the heart, cerebrovasculature, and kidneys, it is a major cause of death among blacks (Cruickshank & Beevers, 1982). As hypertension is often an asymptomatic disease, it is estimated that only 40% of the hypertensive population are aware that they have the disease (Andreoli, 1988). Blacks between the ages 35 and 54 die six to ten times more frequently from hypertension disease than do whites of the same age (Kochar & Woods, 1985). According to Kochar & Woods, the higher blood pressure among blacks may be due to diminished Na-K pump activity, genetic defect in sodium excretion, higher sodium intake, higher body weight and the various types of stressors within black environments presented in Table 1.

Table 1

Interrelations of Causes and Results of Poverty and Disease



From Deterrent to Human Progress, National Research Council, 1986.

Although there can be a variety of causes of hypertension, some researchers consider it to be psychophysical in nature. Hypertension most commonly has been associated with stress in blacks (Gillum, 1989). Gillum noted that the condition generally strikes blacks earlier, with greater severity, than whites and often results in death at an early age from stroke or coronary artery disease.

It is questionable whether there is a correlation between the level of knowledge and the prevalence of hypertension among blacks. In most of the studies reviewed, mass screening programs has been the mechanism used in the detection of hypertension

patients (Apostolides, Entwisle, Ovellet, & Hebel, 1978; Dischinger, Apostolides, Entwisle, & Heber, 1981; Hypertensive Detection and Follow-up Program [HDFP], 1987).

Robinson (1986) however, states that "large segments of the population have not been touched by such programs" (p. 780). Since 1972, federal and local government programs, along with private organizations, have cooperated in an effort to control hypertension through the National High-Blood Pressure Educational Program (NHBPEP). This program focused on increasing public and professional awareness of the seriousness of hypertension. The goal of the program is to reduce the morbidity and mortality associated with hypertension through improved education, detection, and treatment.

Review of the Literature

This review of the literature is divided into three sections. First, the subject of the character of hypertension among blacks is explored. This section is further divided into a discussion of the various risk factors predisposing blacks to hypertension.

In the second section, studies investigating the effects of mass media upon the distribution of public health information are examined.

The third section discusses maternal health as it relates to stress and hypertension.

Dietary Sodium Intake

For several decades now, there has been considerable debate as to the relative contribution of genetic and environmental factors to arterial hypertension in different populations. The

nature of inheritance and the wide range of social factors that are thought to initiate or contribute to high blood pressure continue to pose tremendous challenges to investigators in different parts of the world. Race adds its own dimension of complexity to this subject. However, there is a good deal of evidence on blacks and the effects of diet relating to hypertension.

It has been postulated by several investigators that compared to the general public, blacks consume and have an increased preference for foods higher in sodium content (Finn, 1981, Karp, Williams, & Grant, 1980; Keer, Amante, Decker, & Callen, 1982). This factor has been implicated in the increased prevalence of hypertension among blacks.

In a study conducted by Keer et al. (1982), racial differences in the purchase of salt between blacks, hispanics, and whites were observed. Although the authors report a higher percentage in the purchase of these items in both the black and hispanic communities, the percentages were comparatively higher in the hispanic census tract than in the black areas (202% and 148% respectively). Since hypertension prevalence rates are higher among blacks than other ethnic groups, the results of this study cannot be interpreted as having a causal relationship to the prevalence of hypertension among blacks.

Meneely and Battarbee (1986) proposed that a high sodium-low potassium diet in conjunction with a genetic component leads to the genesis and perpetuation of hypertension in blacks. This type of diet is not exclusive to blacks, but is characteristic of

western civilization. Hill (1979) states "the average person in the western civilization ingests two to three times the recommended daily requirement of sodium chloride " (p. 907). Meneely and Battarbee (1976) report that this consumption is even higher, at least 10 to 35 times the recommended daily requirement. These authors propose several reasons for the prevalence of high sodium diets in the United States. These include: (a) exposure as early as infancy to salt, thus cultivating the taste, (b) the large amounts of salt used by the food processor industry, and (c) the development of a "taste for salt" through the social customs of cooking with salt and eating at fast food restaurants.

Wotman, Mandel, and Thompson (1967) confirmed an elevated salt taste threshold as characteristic of hypertensives, however, no racial differences were reported. On the other hand, subsequent evidence has been presented demonstrating an increased preference for salty foods among black adolescents and adults (Desor, Green, & Maller, 1975). This preference was not observed in this population during infancy (emphasizing the fact that the taste acquirement is a learned response). One cannot, however, attribute this finding as a cause of hypertension prevalence among blacks.

According to the United States Drug Administration (USDA) (1985), the larger percentage of the black family income falls between the 5,000-7,000 category. The nutrients most often missing in poor diets are calcium, vitamin A and C. All too frequently the B vitamins are also missing or are present in

inadequate amounts. Table 2 displays households with diets at three levels of quality by income.

Table 2

Percent of Households with Diets at Three Levels of Quality by Income

<u>Income</u>	<u>%</u> <u>Good Diets</u>	<u>%</u> <u>Fair Diets</u>	<u>%</u> <u>Poor Diets</u>
3,000 - 4,999	37	27	36
5,000 - 6,999	43	33	24
7,000 - 9,999	53	29	18
10,000 and Over	56	28	12

From USDA, 1985

Meneely and Battarbee (1976) hypothesized that since blacks originally evolved from semitropical areas where sodium is not abundant and dietary sodium intake is low, they may have also evolved more efficient means of renal sodium conservation which places them at a disadvantage when exposed to the higher sodium diets of western civilization, resulting in a greater susceptibility to hypertension. This hypothesis led these authors to conclude that the blood pressure variation in response to salt intake may be genetically predetermined. This phenomenon is discussed in greater detail in the following section.

Genetic Predisposition

The genetic theory proposes that the interracial differences in hypertension is indicative of a genetic factor.

Support for this hypothesis comes from the study of Luft, Grim, Fienberg, and Weinberger (1979). These authors examined the blood pressure, natriuretic, kaliuretic, and humoral responses of 347 normotensive black and white subjects after volume expansion and correction. After several days of a controlled high sodium intake through the intravenous infusion of isotonic saline, blacks excreted less urinary sodium than whites. In addition, blacks also excreted less urinary potassium. The delay in sodium excretion occurred during the first twelve hours after the salt load. Blacks also demonstrated higher blood pressure than whites, which persisted until diuretics were given. Luft et al. (1979) concluded that the greater prevalence of hypertension in blacks may be related to a relatively blunted natriuretic response and a "sensitivity" to the blood pressure elevating effect of sodium when exposed to the high sodium-low potassium diets of western society.

There is increasing evidence suggesting that low-renin essential hypertension occurs in a higher percentage of blacks than whites (Gillum, 1979). Some investigators theorize that this finding may suggest that blacks possess a hypertensive genetic trait.

Renin is secreted by the juxtaglomerular apparatus of the kidney. It usually serves as a proteolytic enzyme hydrolyzing angiotensinogen to angiotensin I. Angiotensin I is then transformed by a converting enzyme to angiotensin II. The latter is a very powerful vasopressor agent. Renin release provokes a transient increase in blood pressure in response to a decrease in

renal perfusion. The renin suppression demonstrated in blacks may be of particular significance. The etiology of low renin essential hypertension is thought to be volume dependent, thus indicating a higher salt intake. However, a higher salt intake has not been successfully demonstrated in blacks (Meneely & Battarbee, 1976). Renin release is also under control of the sympathetic nervous system. Lower plasma renin levels in blacks may therefore be indicative of decreased sympathetic tone. Racial differences in heart rates have also been documented (blacks having lower heart rates than whites), thus, adding credence to the theory of decreased sympathetic tone (Gillum, 1979). How the loss of sympathetic tone might relate to higher blood pressures and a propensity toward hypertension in blacks is unclear. Gillum (1979) states "a possible hypothesis might be that decreased sympathetic tone coupled with lower plasma renin activity could be the result of relative volume expansion of primary renal origin" (p. 472). More research is needed to clearly confirm the role of low renin activity in the prevalence of hypertension among blacks.

Obesity has been identified as an important risk factor in the development of hypertension. It has also been demonstrated that weight loss in some individuals results in a reduction of the blood pressure (Stamler, Stamler, Reidlinger, Algera, & Roberts, 1978). However, it was noted in the study by Gillum (1979), that by controlling the weight of individuals, 47.7% of new cases of hypertension could be prevented in whites compared to only 27.5% in blacks. This provides more support to the theory of genetic predisposition of blacks to hypertension.

The morbidity and mortality from hypertension is also greater among blacks. Annual U.S. age-race-sex specific death rates for hypertension have long been higher for non-white men and women (mostly blacks) than for whites (Gillum, 1985), as shown in Table 3.

Table 3

U.S. Age-Adjusted (35+)

Death Rate (Per 100,000) for all Mention of Hypertension,
1978 to 1987

<u>Sex</u>	<u>Race</u>	<u>1978</u>	<u>1987</u>	<u>% Change</u>
Males	Non-white	405.4	282.2	- 30.4
	White	186.8	139.8	- 25.2
Females	Non-whites	381.7	256.4	- 32.8
	White	164.0	114.3	- 30.3

National Heart, Lung, and Blood Institute, 1988

Hypertension Follow-Up & Detection Program, 1989

In a study of the evaluation of the intrarenal vasculature of patients with mild to moderate hypertension through selective renal angiograms, the phenomenon of greater morbidity and mortality from hypertension among blacks was explored (Levy, Talner, Coel, Holle, & Stone, 1978).

After controlling for the duration and severity of the disease, blacks were noted to have significantly more nephrosclerosis and lower renal blood flows than whites. This suggests a sensitivity of the renovasculature of blacks to

hypertension, or perhaps a difference in the amount of target organ damage demonstrated for a given level of blood pressure. More research is needed on this subject to clarify the interpretation of these findings.

Gross racial differences also exist in the occurrence of hypertensive vascular diseases. Gillum (1979) reports that blacks have greater susceptibility to arteriosclerosis of the intracranial vessels while whites more frequently demonstrate these changes in the aorta and coronary vessels. An increased prevalence of hypertensive retinal changes for a given diastolic blood pressure elevation above 100 mmHg in blacks as compared to whites has also been reported. Studies of vital statistics also indicate that blacks die three times more frequently from hypertensive diseases than whites (Moriyama, Krueger, & Stamler, 1971). The degree to which these observations indicate disparities in detection, treatment, and/or severity of hypertension in blacks is unclear. More research is needed to document the influence of these variables upon black hypertensives.

Although a paucity of information exists about the racial differences in cardiac function among hypertensives, it is a documented fact that hypertensive heart disease is more prevalent in blacks than in whites (Gillum, 1979). Blacks also demonstrate a higher incidence of left ventricular hypertrophy and cardiac enlargement (HDFP, 1978).

Table 4 presents the ten leading causes of death in a St. Louis black community.

Table 4

Ten Leading Causes of Death, by Number and Rate, 1986

Cause of Death	<u>Census Tracts (Number per 1,000)</u>			
	1072	1073	1074	1075
Heart Disease	14	25	11	19
Malignant Neoplasms	1	13	3	15
Cerebrovascular Disease	7	11	13	14
Pneumonia/Influenza	0	2	1	1
Accidents	1	4	4	0
Chronic Pulmonary Disease	0	3	1	0
Homicide	1	8	3	4
Diabetes Mellitus	0	1	1	0
Cirrhosis of Liver	0	0	0	2
Suicide	0	0	0	1

From Vital Statistics Annual Report, 1986

St. Louis Division of Health, Biostatistical Service.

Socioeconomic Status

Another risk factor associated with the prevalence of hypertension among blacks is that of low socioeconomic status. Studies of black males from low and middle social classes in Charleston County, South Carolina demonstrate social class and age as variables consistently associated with the incidence of hypertension in this study group (Keil, Tyroler, Sandifer, & Boyle, 1977). The prevalence of hypertension was found to be three to four times greater when the study participants were of

low social class than when they had higher social class scores. These researchers used the "Green Manual" for calculating socioeconomic status. This instrument scored study participants based on their educational level and occupation at the time of recruitment into the study. Apparently, no attempt was made by these researchers to assess the pre-existing health problems prevailing in these groups. It has been widely demonstrated that individuals in lower socioeconomic levels have a myriad of complex health problems (Seftel, 1977). This fact could somewhat bias the results of this study.

Numerous studies have documented environmental factors and social disorganization can be associated with hypertension. Naditch (1974) and Opit (1984) found that the higher prevalence of hypertension among blacks has been laid to their increased level of discontent and other social stresses. The lower the social class, occupational status and education, the higher prevalence of hypertension. According to Diamond (1982), hypertensives may display higher levels of hostility and anxiety and inadequate mechanisms to press aggressive tendencies or to express their emotions. Steptoe and Melville (1984) emphasized the need to study psychological status before patients are aware of their diagnosis since they may develop various psychological problems after being labelled as hypertensive.

Socioeconomic Influence on Black Children

In the Bagalusa Heart Study (1979), the socioeconomic status was measured by the education and occupation of each child's parent or guardian. Whereas 67% of the black parents did not

finish high school, only 30% of white parents failed to finish high school. In addition, 28% of white parents had some college education, compared with only 10% of black parents. Moreover, 50% of white parents held white-collar jobs, compared with 18% of black parents. When Bogalusa and Associates (1979) stratified the children by race into seven educational levels, they observed similar mean blood pressures for blacks and whites at each level of parental education. They also observed that black children whose parents had post-graduate education actually had somewhat lower systolic blood pressures than their counterparts among white children.

It was cautioned against overemphasizing these findings, since parental education and occupation probably influence the blood pressure of children through a number of complicated pathways, including diet, control of body weight, and strategies for appraising and coping with environmental stress.

Also, as children grow older, the influence of family social status on hypertension risk may either diminish or become even more pronounced. In part, this seems to depend on whether or not there is a basic continuity in life styles for parents and their children after they reach adulthood. Nevertheless, the finding that parental social status influenced mean blood pressures of black and white children in the Bogalusa Heart Study (1979) was consistent with national data on social correlates of blood pressure in children. In addition, the finding suggests that parental social status might also have contributed to the racial difference in mean blood pressure at higher pressure ranks.

Socioeconomic Influences on Black Adolescents

Studies of adolescents have shown that black youth who live in economically depressed, inner-city areas tend to have higher arterial pressures than black youth who reside in more affluent, economically stable areas. For example, Katchen (1984) compared mean systolic pressures of high school seniors attending a middle class, suburban school in the Washington, D.C. area with high school seniors attending a school in inner-city Washington, D.C. All students were between 17 and 20 years old. Adjusted for relative weight, mean systolic pressure of black males (N = 95) at the suburban school was 120 mmHg, that of white males (N = 113) at the same school was 116 mmHg, and that of black males (N = 157) at the inner-city school was 123 mmHg. Moreover, 8.6% of suburban black males had systolic blood pressures \geq 140mmHg, compared to 12.3% of inner-city black males. No white males had systolic pressures \geq 140mmHg.

In this same study, females had lower mean systolic pressures than males; however, the rank order by race and locale was the same as for males. The average systolic pressure for black females (N = 24) at the suburban school was 108mmHg, that of three white counterparts (N = 94) was 106mmHg, and that of their black counterparts at the inner-city school (n = 124) was 111mmHg. Only three females had systolic pressures that exceeded 140mmHg, and all three were black females who attended the inner-city school.

Kilcoyne (1974), in a study of New York high school students, found that 3.7% of black males, 2.7% of Latin males, 1.8% of white males and 0.6% of females had blood pressures \geq 150/90mmHg.

Similarly, in a study of 1,863 12-20 year-olds in New York City, Reichman (1975), found that 13.4% of black males, 10% of white males, 5.3% of black females and 4.9% of white females had blood pressures \geq 140/90 mmHg. Thus, the available evidence seems fairly consistent: (1) by late adolescence, blacks have higher blood pressure than whites, (2) males tend to have higher pressures than females, and (3) blacks (especially males) from lower socioeconomic status backgrounds tend to have higher arterial pressures than other groups.

Socioeconomic Influence on Blood Pressure in Black Adults

Numerous cross-sectional studies have demonstrated that socioeconomic status, as measured by the individual's level of education, income, or occupation, is inversely associated with blood pressure in black adults.

The two key assumptions that guided Harburg (1975) in the Detroit blood pressure study were:

Urban socioecologic areas that vary in rates of stressful conditions may have populations that vary in levels of blood pressure, and (2) socially disorganized life areas generate problem situations that require adaptation more often (and with less resources for solution) than more organized areas.

Thus, in the Detroit study, chronic exposure to socio-environmental stressors were more consistently related to high blood pressures in blacks. The percentage of hypertensives (DBP \geq 90) among these high stress blacks was two and one-half times that of the low stress blacks.

The data supported these hypotheses. Blacks in high stress communities were two times more likely to die from hypertensive related diseases than their counterparts in low stress communities. High stress environment influenced blood pressure of black children, adolescents and adults.

A second study, conducted by Eckenfels et al. (1977) documents some of the above findings. These authors studied the entire black population of Holmes County, Mississippi, "an area described as rural, poverty stricken, and socially deprived" (p. 499). The health status of this community was characterized by a high morbidity and mortality rate (it is noted for its historical involvement in the civil rights movement of the sixties). Eckenfels et al. (1977) described hypertension in this community as "endemic." They base this premise on the findings denoting an extremely high prevalence of hypertension among both sexes of this population (43.5% males, and 39.5% females). These statistics become even more striking when compared with those of the National Health Survey, in which blacks with hypertension comprised only 27.6% of the total population. The participants in Holmes County demonstrated a higher prevalence of hypertension among all age groups including young people between the ages of 10 and 24 years, when compared to the National Health Survey. One question not examined in this study is: Does the prevalence change when subjects are removed from Holmes County? The investigation of this question would possibly facilitate a correlation of environmental effect upon the prevalence or perpetuation of hypertension.

A study conducted by the HDFP (1977b) examined the relationship between socioeconomic status and racial differences in the prevalence of hypertension. Demographic data were obtained from each respondent on three socioeconomic variables: (a) level of education completed, (b) current employment status, and (c) head of household's occupation. Among these variables, level of education was selected for the analysis of this relationship. The levels of education selected were: less than 10 years, 10-11 years, and 12 years through the completion of college. Controlling for the nuisance variables of age and weight, these researchers found an inverse relationship between education and blood pressure; that is, the lower the level of education, the higher the blood pressure. The racial differences in the prevalence of hypertension were not lower in the more educated versus the less educated. Blacks with college education levels still demonstrated a 2:1 ratio to whites of the same educational level. Although this ratio was more favorable than those of the lower educational levels, it substantiates a generally higher prevalence of hypertension in blacks, regardless of socioeconomic status.

These studies do support socioeconomic status as an index in the development of hypertension in blacks; however, they do not support it as an exclusive variable. All people of lower socioeconomic status have similar health problems (McKeown, 1981). Prevalence to disease and high mortality rates are commonplace problems among these groups (Fuchs, 1974). This is probably a reflection of their limited access to continuity of health care,

their inability to exercise a choice in their source of health care, and their tendency to disregard illness until it becomes a crisis event (Torrens, 1981). On the other hand, hypertension tends to prevail among blacks regardless of their socioeconomic status.

Emotional Stress

Hypertension has been viewed by some authors as a psychophysiologic condition (Meyer, Derogatis, Miller, & Reading, 1978; Sparacino, 1982). The normal reaction of the body to stressful situations involves sophisticated physiologic processes. The sympathetic nervous system and adrenal medulla act to increase the cardiac output and rate, dilate the pupils, constrict the blood vessels of the skin, increase the glucose and fatty acids in the circulation and induce an alert, aroused mental state. The end result of these reactions culminate in an increase in the blood pressure as the defense system is aroused. In the hypertensive person, however, these normal cardiovascular responses to stress may become continuous over time; thus, sustaining the increased blood pressure (Meyer et al., 1978).

Numerous studies have been conducted supporting the role of stress in either initiating, predisposing, or sustaining hypertension in blacks (Brunswick & Collette, 1977; Miller & Grim, 1979). These studies share the common premise of suppressed hostility and a high stress environment correlating with the prevalence of hypertension among blacks (Sparacino, 1982). Miller and Grim (1979) state "difficulties in adaptation may result in years of vascular, autonomic, and hormonal malfunction due to an

individual's perception of events as threatening" (p. 86). Blacks of lower socioeconomic status are more frequently exposed to conditions of poverty, low occupational and educational status, and high levels of emotional stress (Gillum, 1979). Their continuous exposure to stressful situations may correlate with the incidence of hypertension among this group, however, one cannot assume that environmental stress has a causal role in the prevalence of hypertension among blacks.

Weiner (1977) presents evidence contrasting this impression. He demonstrates racial similarities in the prevalence of hypertension caused by stressful events. He presents evidence supporting the hypothesis that when a society is stable and its members live in psychological adaptation, blood pressure does not become elevated with age. He points out that patients with hypertension have unconscious conflicts of hostility, aggression, and dependency that may produce certain personality traits. In comparison with normotensive individuals, Miller and Grim (1979) describe hypertensives as more tense, hostile, suspicious, and overtly aggressive. They view the development of hypertension as an individual's inability to adapt to social, environmental, or cultural change.

Perhaps the most compelling psychophysiological evidence supporting the hypothesis that suppressed hostility leads to elevated blood pressure is presented in a study testing the effect of aggression on vascular processes (Hokanson & Burgess, 1962). These researchers observed college students who were intentionally harrassed by an experimental accomplice. All subjects

demonstrated an elevation in blood pressure as a result of this harrassment. However, only those subjects allowed to retaliate demonstrated reductions in blood pressure to normal levels. Those who were not allowed to overtly express anger sustained blood pressure elevations for longer periods. Some researchers suggest that the struggle of blacks with racism in the United States substantiates the theory of suppressed hostility (Brunswick & Collette, 1977; Cooper, Steinhauer, Schatzkin, & Miller, 1981). However, it may be presumptuous to suggest this phenomenon as a causal factor in the prevalence of hypertension among blacks since there are many co-existing variables that predisposes them to susceptibility.

Although the psychological elements cited in this literature review as characteristic of hypertensive subjects can be identified in blacks, one cannot deduce from these studies that they are exclusive to them. Further studies need to be conducted to substantiate the role of emotional stress in the development of hypertension among blacks.

In conclusion, the studies presented in this literature review substantiate racial differences in the prevalence, character, and severity of hypertension. They also delineate several risk factors, exclusive to blacks, that predispose them to the development of hypertension.

Role of Mass Media in Public Health Information

Mass media has been widely used for the distribution of public health information. The National Heart, Lung and Blood Institute, in 1982, spent \$350,000 to produce and distribute mass

media materials regarding hypertension (Ward, Morrison, & Schreiber, 1982). These materials have been primarily used to educate the general and hypertensive public about hypertension. Three goals have been intimated as the rationale for the use of mass media in public education. These include: teaching correct health information, changing health attitudes and values, and establishing new health behaviors (Griffiths & Kuntson, 1960). It is theorized that the well-informed patient may take a more active role in his/her health care as compared to the poorly educated one. Mohammed (1964) believes the well informed patient will be more compliant with his/her health care regimen. Too many variables exist, however, in evaluating the effectiveness of mass media upon public education. These include exposure to the various media sources, recipient reading and comprehension ability, and level of education.

The effectiveness of printed communications may depend upon its complexity in relation to the recipient's reading ability. Mohammed (1964) suggests that non-selective use of printed health information may impair communication, or produce a partial understanding creating unwarranted fears and misconceptions. This author stresses the importance of evaluating the recipient's reading comprehension, if possible, prior to the distribution of printed information.

Smeltzer (1980) substantiated this philosophy in a study conducted to determine the relationship between recognition and understanding of lay and medical hypertensive terminology among hypertensive patients. The author concluded that an individual

learning needs assessment must be performed to ensure comprehension. Age and educational level proved to be significant indicators in comprehension ability. Although not statistically significant, the variable of race demonstrated a difference in the understanding of the terms used. Blacks defined medical terms correctly less frequently than whites.

Research has demonstrated electronic media to be an effective and efficient tool for education (Staffer & Pfeiffer, 1976). However, it is noted that these studies were conducted in college or school environments on healthy subjects (Billie, 1980). Another study in support of electronic media was reported by Griffiths and Kuntson (1960). This study conducted by the War Department during World War II, used training films to provide factual information regarding the war to soldiers. The researchers also hoped to meet the following objectives: (a) to overcome prejudices, (b) to arouse motivations, and (c) to modify attitudes. The study results concluded that the films were quite effective in imparting factual information. They were also effective in changing opinions, but these changes were not as significant as the changes in information. The films were ineffective, however, in motivating the men to serve as soldiers. This evaluation suggests that in order to stimulate change in the affective domain, more must be known about these complex psychological factors. However, it is noted again that these were healthy subjects. Similar studies evaluating this phenomenon in the use of printed material duplicates these results (Chaussion, 1980).

Griffiths and Kuntson (1960) have shown evidence that mass media of all forms tend to reach selected audiences. Readers of the printed media are more likely to be better educated, of higher socioeconomic status, and active in community activities. This observation also applies to users of the public library. The major concern of mass media is not that of reaching people, but rather, of reaching the desired audience.

Chaission (1980) believes that the poorly educated are less likely to use mass media. Thus, the segment of the population with the greatest need is least likely to be exposed to health education via this medium. Moreover, if exposed to printed media, they are seldom able to derive any beneficial information from it because of their poor reading comprehension. If exposed to electronic media, they may derive beneficial information, however, will they be able to integrate this information to effect change in established patterns of behavior?

Ward et al. (1982) on the other hand, presents data refuting the above discussion. These researchers conducted a pilot study of health professionals' awareness and exposure to hypertension information via the mass media. They surveyed a multidisciplinary professional group consisting of nurses, doctors, and pharmacists to determine their exposure to various types of mass media. Those professionals reporting use of a given medium were also asked if they recalled items regarding hypertension from that medium. They concluded that the high recall and accuracy rates of these professionals substantiate the effectiveness of mass media as a conduit for health information. However, it must be noted that

the use of health professionals in this survey could positively bias the results of this study. The professionals' prior knowledge could possibly have a confounding effect upon their recall of hypertensive information. It is also not clearly defined in this survey what specifically is meant by media recall. At first glance, the term is perceived to mean "content" of media items. However, a closer examination of the data also suggests "recall" as representative of remembering exposure to a medium discussing hypertension. This study's generalizability is also limited to members of higher socioeconomic and educational levels, since the sampled population possessed these attributes.

In summary, mass media has the potential for being a reliable conduit in the distribution of health information. However, it has limitations in so far as reaching all audiences and causing changes in health behavior. Further studies investigating its effectiveness in imparting health information to sick individuals and individuals of various socioeconomic and educational levels need to be undertaken.

Maternal Health

A fairly broad spectrum of disease and disorder which may negatively affect the health of the expectant black mother may, in turn, negatively affect the health, growth and development of her child. The adverse of maternal disorders and diseases can be catastrophic (Butcher, 1989).

For example, maternal hypothyroidism, an endocrine disorder which results in a deficiency of the thyroid hormone which is so essential for the regulation of body metabolism and growth, may

produce cretinism in the child. In this instance, the bones and cartilage of the child fail to develop, its stomach will be large, flabby and protruding, its skin rough and coarse, the hair shaggy and its intellectual functioning far below normal. Other endocrine disorders may also cause microcephaly, mental deficiency accompanied by a small, pointed skull and mongolism, subnormal mental functioning accompanied by slanted eyelids.

Black mothers who have tuberculosis and infections of the urinary tract produce more children with birth defects than normal mothers (Wilson, 1987, January). It is possible for syphilis bacteria to enter the embryo and cause spontaneous abortion which may be the more fortunate event when one realizes that a child born of a syphilistically infected mother may suffer from congenital syphilis itself.

Maternal health conditions such as high blood pressure and diabetes may also seriously destroy the child's development or prove fatal to its life or the life of its mother (Allen, 1989, December). According to Allen, the groups containing the largest number of mothers suffering from such disorders, infections and health conditions will produce the largest proportion of babies with health problems, developmental irregularities, abnormalities and deviations. Overcrowded, poverty-stricken socioculture conditions as well as the absence or lack of adequate prenatal medical care add to that larger proportion. Table 5 contains birth and death information in a St. Louis black community.

Table 5

Birth and Death Information and Rates Per 1,000, 1986

<u>Census Tracts</u>	<u>1072</u>		<u>1073</u>		<u>1074</u>		<u>1075</u>	
<u>Category</u>	<u>W</u>	<u>NW</u>	<u>W</u>	<u>NW</u>	<u>W</u>	<u>NW</u>	<u>W</u>	<u>NW</u>
Live Births	1	78	0	148	0	140	3	117
Neonatal Deaths	0	1	0	1	0	3	0	1
Infant Deaths	0	1	0	3	0	4	0	3
Low Birth Weight	0	14	0	21	0	18	0	13
Illegitimate								
Births	0	62	0	102	0	120	0	100
Total Deaths								
Birth - 4 yrs.	2	7	12	67	6	33	4	54

Note: W/NW = White/Non-White

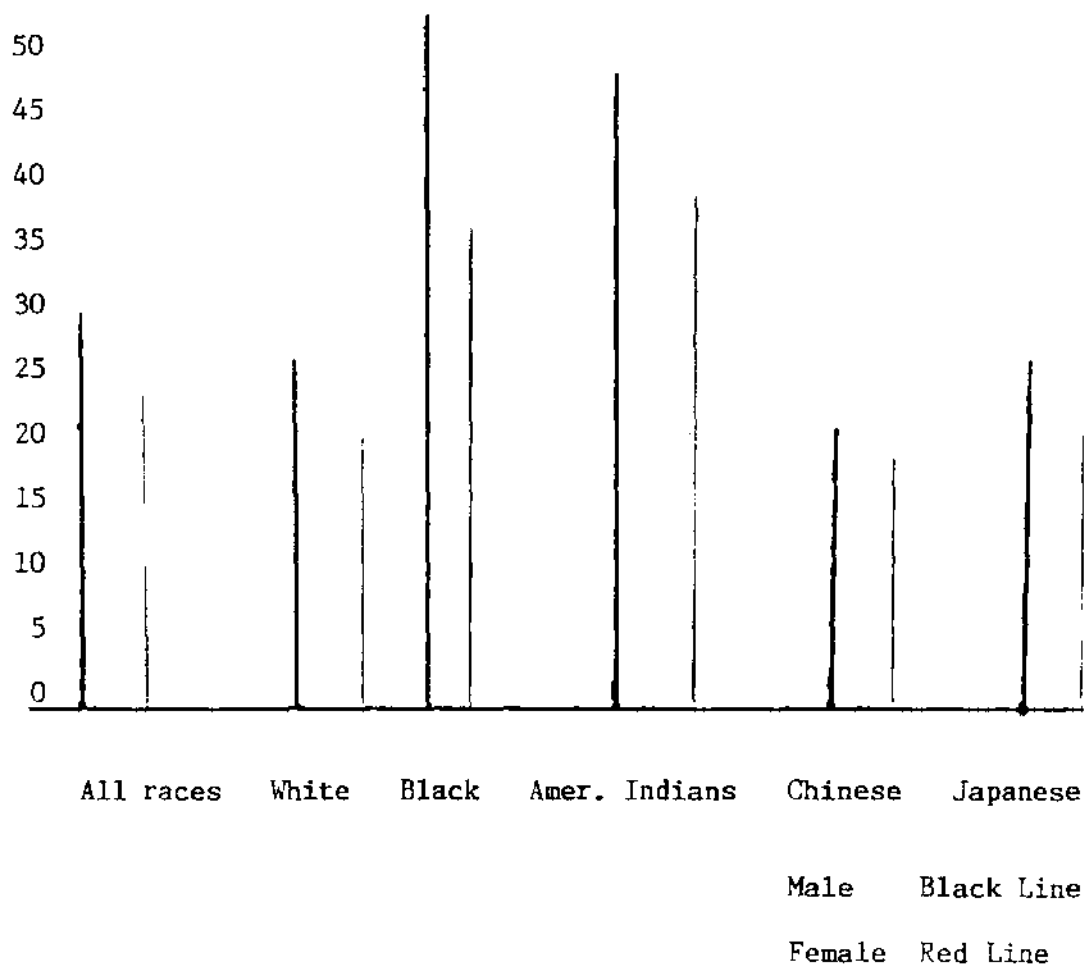
From: Vital Statistics Annual Report, 1986, Table 2. St. Louis Division of Health, Biostatistical Service.

In an effort for the black mothers to cope with environmental stress, personal problems, peer groups pressure and sociocultural traditions brought on by the black conditions in a poor black community, the black mother may become dependent on street drugs or alcohol (Wilson, Jan. 1987). According to Wilson, in many cases the mother in some cases may increase her intake of drugs with the objective of finding temporary relief from the effects of stress, problems and pressure and as a means of accomplishing the approval of peer groups and social acceptance. Many researchers have established that the excessive drinking of alcohol during

pregnancy can cause "fetal alcohol syndrome". Some of the symptoms of this syndrome are retarded physical development, which never attain its full genetic potential, retarded motor development, subnormal intelligence, heart abnormalities, small heads with facial defects and deviations in the structure of the joints.

The results of a number of studies indicate that all stillbirths, all cases of infants dying during the first few days after birth, excepting those with major genetic defects, were products of poorly nourished mothers who maintained a poor, inadequate diet during pregnancy (New York Times, Oct. 1984). Table 6 presents infant death rates under one year.

Table 6

Death Rates Under One Year per 1,000 Live Births

From Heterington and Parke, 1985

It was found that 94% of the infants born in good or excellent condition were born to mothers who maintained good or excellent diets during pregnancy (New York Times, Oct. 1984). A follow-up study done by the Times indicated that those mothers whose diets were poor and became pregnant again, produced poorer maternal records with the later child. The trend was reversed with mothers whose diet had improved.

Summary

Despite the annual investment of thousands of dollars in the production of mass media materials to provide public education concerning hypertension, hypertension remains a health menace to blacks. Currently, there is no data available examining the knowledge of blacks exclusively, regarding hypertension. Some surveys have consistently demonstrated a general lack of public knowledge of hypertension, while others report improvement in this trend (Haines & Ward, 1981; National Heart, Lung and Blood Institute [NHLBI], 1973; Smeltzer, 1980). Mass media has been implicated as a valuable source in the distribution of health knowledge. To date, however, there are no empirical studies examining its role in the acquisition of health information among individuals of various educational and socioeconomic levels. Some researchers have demonstrated that mass media reach selected audiences, and individuals of low socioeconomic status are not among them. Blacks are more commonly exposed to low socioeconomic conditions. Blacks are also highly susceptible to the development of hypertension.

The environment surrounding the black mothers in a poor community may expose them to factors which adversely will influence the development of the unborn child. Such factors include high blood pressure which may seriously destroy the child's development or prove fatal to its life or the life of the mother. Other factors are poor physical health, inadequate diet, poor medical care, unfavorable age and parity, unhealthy emotional

attitudes concerning the self and finally an unwholesome lifestyle (Allen, 1989, December).

Statement of Purpose

The purpose of this study was two-fold. First, it sought to survey the knowledge level of blacks regarding hypertension. A questionnaire was developed to test knowledge of the etiology, detection, and treatment of hypertension. In addition, knowledge as a function of socioeconomic status (income) and education was explored.

The second goal was to make an assessment of a black community to acknowledge the character and behavior of blood pressure in blacks as it relates to ways of life and stress factors in the community.

Several specific questions were explored:

- (1) What was the level of knowledge regarding hypertension in the black community?
- (2) Was there a relationship between level of knowledge and socioeconomic status and/or educational level?
- (3) Was there a relationship between the level of stress in a poor black community and hypertension?

Chapter 2

Method

This study was designed to assess the knowledge of an urban black community on the subject of hypertension. The study was implemented by conducting interviews with volunteer participants

who met the criteria. Each participant was required to complete a standard questionnaire designed to test knowledge of hypertension, as well as make a general assessment of this black community and correlate the stress effects that may relate to hypertension. In addition, the variables of education and income were also considered.

Operational Definitions

Hypertension. A common, often asymptomatic disorder characterized by a persistent elevation of the systolic blood pressure greater than 140 mmHg and a diastolic blood pressure greater than 90mmHg.

Level of knowledge. The actual score received on the Test of Knowledge of Hypertension in Section II of the questionnaire (See Appendix A).

Socioeconomic status. The relative placement of an individual or group in the social status hierarchy directly influenced by income level.

Stress. A physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation or bodily or mental tension resulting from factors that tend to alter an existent equilibrium.

Setting

The northside community is an urban community located in the northern part of the City of St. Louis. It comprises Census Tracts 1072, 1073, 1074 and 1075. The boundaries of this area are: Goodfellow to the West; Natural Bridge to the South; Kingshighway to the East; and West Florissant to the North.

Interstate 70 runs through the southern segment separating approximately one-fifth (1/5) of the land area.

The major composition of this black community is residential, particularly in the eastern and northern areas. For the most part, the commercial area is located in the southern and western sections (U.S. Census, 1980).

The commercial areas consist of shops, many corner grocery stores, liquor stores, taverns and fast food restaurants such as, fried chicken, store-front Chinese places, Barb-B-Q and soul food restaurants. These foods have been considered by the Food and Drug Administration to be high in sodium and fat and contribute to coronary artery disease and hypertension.

Industries that are located in these census tracts can be found in the southwest part of the geographic boundaries. These range from federal government plants to trucking companies, to many other types of manufacturers. The majority of the people are primarily low income blacks (U.S. Census, 1980, Table 7). They are predominantly young blacks making up the largest percentage of the residents' age 0 to 17 (U.S. Census, 1980), as presented in Table 8.

Table 7

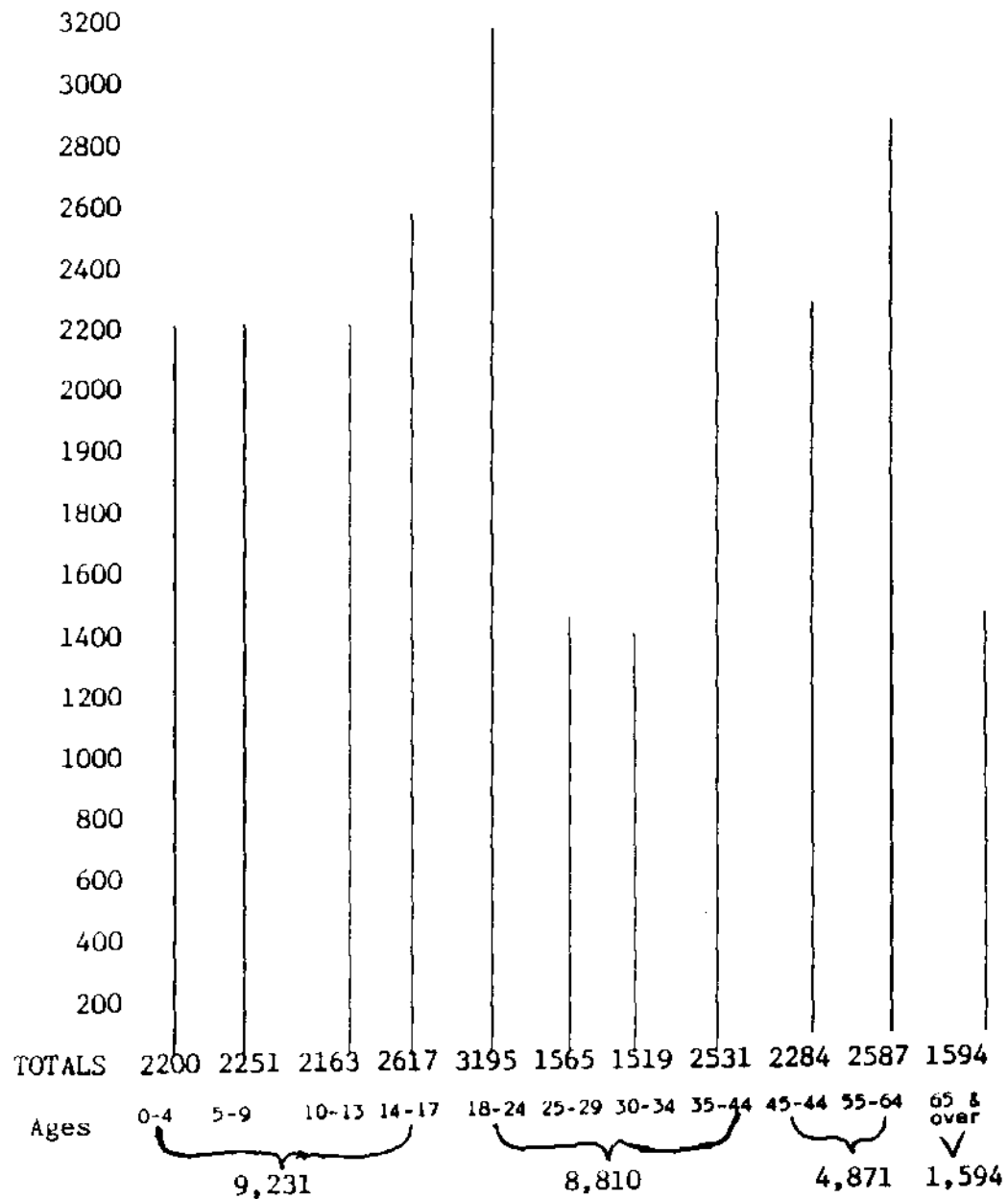
Income in 1980 Below Specified Poverty Level

<u>Categories</u>	<u>Census Tracts</u>			
	<u>1072</u>	<u>1073</u>	<u>1074</u>	<u>1075</u>
Families below 75% of poverty level	26.2	15.9	29.9	15.3
Below 125% of poverty level	39.0	24.6	46.4	29.5
Below 150% of poverty level	44.7	30.7	52.9	35.0
Below 200% of poverty level	62.9	42.0	68.0	52.9

From U.S. Census, 1980, Table P-11

Table 8

Population Statistics, Population by Age



Total population of Census Tracts 1072-1075 is 24,506.

From U.S. Census, 1980, Table P-1

Blacks in this community have varied educational and economic foundations. They range from poor residents, displaced from the downtown projects because of urban renewal, to some middle class blacks and affluent families as presented in Tables 9 and 10 (U.S. Census 1980).

Table 9

Educational Levels by Number and Percentage of Population, 1980
Persons 25 and Older

	Census Tract 1072		Census Tract 1073	
<u>Level of Education</u>	<u>Number/Percentage</u>		<u>Number/Percentage</u>	
Elementary 0-8 yrs.	299	24.6%	916	20.3%
High School 1-3 yrs.	346	28.5	1095	24.3
High School 4 yrs.	393	32.3	1589	35.2
College 1-3 yrs.	129	10.6	627	13.9
College 4 or more yrs.	48	4.0	287	6.4
Median Yrs. School	10.7	94X	11.2	98X

	Census Tract 1074		Census Tract 1075	
<u>Level of Education</u>	<u>Number/Percentage</u>		<u>Number/Percentage</u>	
Elementary 0-8 yrs.	654	24.8%	511	19.9%
High School 1-3 yrs.	775	29.3	655	25.5
High School 4 yrs.	919	34.9	825	32.1
College 1-3 yrs.	218	8.3	383	14.9
College 4 or more yrs.	70	2.7	193	7.5
Median Yrs. School	10.6	93X	11.1	98X

From U.S. Census, 1980, Table A-7

Table 10

Income Levels by Number and Percentage of Population, 1980

<u>Income</u>	Census Tract 1072		Census Tract 1073	
	<u>Number/Percentage</u>		<u>Number/Percentage</u>	
Less than 5,000	423	58.1%	1,159	45.6%
15,000 - 29,000	261	35.9	1,033	40.7
30,000 - 49,999	44	6.0	315	12.4
50,000 - 74,999	0	0	15	0.6
75,000 and over	0	0	19	0.7

<u>Income</u>	Census Tract 1074		Census Tract 1075	
	<u>Number/Percentage</u>		<u>Number/Percentage</u>	
Less than 5,000	1,101	68.4%	836	57.3%
15,000 - 29,000	398	24.7	442	30.3
30,000 - 49,999	111	6.9	171	11.7
50,000 - 74,999	0	0	10	0.7
75,000 and over	0	0	0	0.0

From U.S. Census, 1980, Table A-6

The community is protected by the Sixth District of the St. Louis Police Department. According to the Captain's Aide, there are 106 policemen employed in the Sixth District. However, because the community has become heavily infested with illegal drugs and the selling of them, the drug dealers and users have substantially out-numbered the policemen 10 to 1 (6th District Police Department, Personal Communication, Dec. 1989). The

Captain states the social atmosphere is one of fear - sometimes conscious, sometimes unconscious. Fear of being mugged, assaulted, insulted, witnessing revolting acts and events or returning to a robbed apartment or home (as presented in Table 11).

Table 11

1988-1989 Crime Statistics

			Aggravated	Residential
<u>Homicide</u>	<u>Rape</u>	<u>Robbery</u>	<u>Assault</u>	<u>Burglary</u>
176	20	60	20	89
Business	Auto	Larceny	Larceny	
<u>Burglary</u>	<u>Theft</u>	<u>Over 200</u>	<u>Under 200</u>	
80	128	233	270	

Consequently, paranoia is a way of life and a chronic state of being. According to the Captain's Aide, the Sixth District will be moving to a larger location on Union, being newly constructed along with the Seventh and Eighth District Police Department to provide greater coverage for the community. This is referred to as the "area concept." The Sixth District has also joined forces with the clergymen and block units to organize marches in an effort to rid the community of drug dealers and offer assistance to drug users, particularly the young mothers in the community (6th District Police Dept., Dec. 1989). Black citizens in this community also have community leadership position, education and civic organization.

The setting was selected because of its diversity of black individuals in various educational and socioeconomic levels (Census 1980, Table 9). It was felt that individuals in this community were most representative of the target population, as presented in Table 12 (U.S. Census, 1980).

The census data shows that the black composition of the community has increased within the last ten years. However, there's been some data collection as current as 1980 to 1986 and during those last six years the black composition of the community has remained the same.

Table 12

Ethnic Group by Percentage of Population 1980

<u>Race/Ethnic Group</u>	<u>Census Tracts/ Percentage</u>			
	<u>1072</u>	<u>1073</u>	<u>1074</u>	<u>1075</u>
Black	84.8%	85.8%	88.0%	93.6%
White	15.2%	13.9%	11.6%	6.4%
other	0.0%	0.4%	0.4%	0.0%
Hispanic (All Races)	1.0%	0.8%	0.4%	0.4%
Percent Minority	85.9%	86.2%	88.4%	93.6%

From U.S. Census, 1980, Table A-4

The population is increasing in these census tracts causing even more congestion and over-crowding. There's no sign of new development of housing in this community but an increase of boarded-up homes and vacant lots.

Table 13

Occupations by Number and Percentage of Population, 1980

<u>Occupation</u>	Census Tract 1072		Census Tract 1073	
	<u>Number/Percentage</u>		<u>Number/Percentage</u>	
Managerial/Professional	58	6.1%	388	11.7%
Technical, Sales & Admin. Support	305	32.3	974	29.4
Service Occupations	251	26.6	683	20.6
Farm, Forestry, & Fishing	16	1.7	35	1.1
All Others	315	33.3	1,229	37.1

<u>Occupation</u>	Census Tract 1074		Census Tract 1075	
	<u>Number/Percentage</u>		<u>Number/Percentage</u>	
Managerial/Professional	174	9.6%	187	9.8%
Technical, Sales & Admin. Support	359	19.7	586	30.7
Service Occupations	611	33.6	515	27.0
Farm, Forestry, & Fishing	7	0.4	14	0.7
All Others	670	36.8	606	31.8

From U.S. Census, 1980, Table A-8

Subjects

The subjects for this study and assessment were drawn from the population described in the setting. To be included in the

hypertension study the subject had to satisfy the following criteria:

1. Black adult between the ages of 20 and 70 years.
2. Must reside within the area described in the setting.

Questionnaire Sampling

The clustered sampling plan was used for the hypertension study.

A list of churches in the described setting was obtained from the Chamber of Commerce. This list was compared to a map of the census tracts to determine the locations of the neighborhoods. A list of churches within these neighborhoods was then compiled. This list contained a total of 20 churches. The names of all 20 churches from this frame were placed in a bin and random selections were made at two separate drawings until a total of fifteen churches were obtained. As a result of the first drawing, not enough churches participants were recruited. Therefore, a subsequent drawing was necessary. A total of six churches participated. These six churches were representative of various denominational groups. A personal meeting with the minister of each of these six churches was made, followed a week later, by a personal telephone contact. In both the meeting and the telephone contact, the purpose of the study was explained and permission was requested to conduct the study and recruit volunteer participants among their congregation. In addition, a pre-conference was held with each minister prior to addressing the congregation.

Data collection began in the month of November, 1989. During this time, the principal investigator attended a single service at

each church and recruited volunteer participants. At three of the churches, this forum was after completion of the Sunday morning service; while at the other three churches it was after Sunday School service. At each church a general announcement was made by the minister incorporating the following elements: the presence of the investigator at the service, an explanation of the study being conducted, and the need for volunteer participants. All subjects were given a verbal description of the study as well as a written cover letter (See Appendix A). Both methods included the elements of informed consent.

The respondent's act of completing and returning the questionnaire was interpreted as informed consent. Data collection continued through the month of February, 1990. The projected sample size was 300. However, 152 were returned, and of those 51 were excluded because they didn't meet all of the criteria for inclusion and one was excluded because several essential pages of the questionnaire were not completed.

The actual sample size was, therefore, 100.

Instrumentation

After an extensive review of the literature and an assessment of the community, a preliminary tool was developed to assess the knowledge of hypertension (See Appendix B). A three part questionnaire was then developed.

Section I of the questionnaire surveys demographic data on the variables of age, sex, education, and income level.

Section II of the questionnaire measures the participants' knowledge of hypertension. It is composed of a mixture of

multiple choice questions that have one or more correct answers and several questions with only one answer.

These questions consist of content matter on the etiology, detection, and treatment of hypertension. Four additional questions at the end of this section were asked in order to survey the sources used by participants to acquire health and general information. These same questions were also designed to assess how much the participant had learned about hypertension in the past year, and determined when they last had their blood pressure measured.

Special emphasis was placed on devising a tool understandable to subjects with low reading comprehension levels. In general, the questionnaire required 15 to 20 minutes to complete.

The questionnaire was reviewed by a panel consisting of two physicians specializing in the treatment of hypertension, a nurse clinical specialist, a director of a city hospital education department, and a nurse community health educator. Suggestions from this committee were incorporated in the revised tool and used in a pilot study.

Data Collection

Questionnaire. The questionnaire was given to ten subjects similar in characteristics to the sample who volunteered their participation. This was done in conjunction with the nurse community educator. Anonymity and confidentiality were preserved among the pilot participants; however, they were asked to indicate on the questionnaire their reaction to, and overall impression of the questions asked. Most of the pilot participants stated that

they did not understand the rationale for the inclusion of the question regarding the level of income however, this did not lessen their willingness to answer this question. They also thought that all of the questions were easy to read and comprehend. After the data collection for the pilot test was completed, a test of the instrument's reliability was accomplished using coefficient alpha. The coefficient alpha internal consistency reliability was found to be $\alpha = .77$ for the knowledge of hypertension scale.

The participants were given a verbal and written explanation of the purpose of the study. Both explanations included the assurance of anonymity and confidentiality. Each participant was given a questionnaire and a plain white envelope (See Appendix B). They were instructed to complete the entire questionnaire and insert it in the plain white envelope prior to returning it to the investigator. The researcher was available to answer any questions pertaining to the questionnaire if they arose. After the subjects completed the questionnaire, at each study site, it was given to the investigator in the plain white envelope and then deposited into a large box.

Chapter 3

Results

The four demographic characteristics of the study group are illustrated in Table 14. All age groups between 20 and 60 years

are fairly evenly represented. Participants over 60 years of age represented only 6.1 percent of the sample.

Approximately 83% of the subjects possessed an education level ranging from tenth grade to college. Over one-half (52.1%) of the subjects reported having had some college education.

Analysis of the income level of the participants indicated a wide distribution among all income levels; however, over 55% of the respondents reported earning less than \$15,000 per year. Therefore, the socioeconomic status of this group is predominantly lower-middle class. This finding is somewhat surprising and in conflict with the census especially since the educational level demonstrates a majority of college prepared individuals.

The gender distribution of the sample demonstrated that the majority of the participants were females (63.6%). This perhaps reflects greater church attendance by females or is related to their preponderance in the general population in the community. This finding may also help to explain or influence the socioeconomic placement of the study group, since generally females are lower salaried individuals.

Table 15 depicts the percentages of scores which were correct, partially correct and incorrect on the knowledge of hypertension.

Table 14

Demographic Characteristics of the Study Sample

(n = 100)

<u>Characteristic</u>	<u>Number</u>	<u>Percent</u>
<u>Age</u>		
20 - 30 years	28	28.9
31 - 40 years	18	18.6
41 - 50 years	19	19.6
51 - 60 years	26	26.8
61 - 70 years	6	6.1
<u>Education</u>		
Grades 1 - 6	2	2.1
Grades 7 - 9	9	9.2
Grades 10-12	30	31.3
Any college	50	52.1
Technical school	5	5.2
<u>Income</u>		
Under \$5,000	24	26.1
\$ 5,000 - \$ 9,999	12	13.0
10,000 - 14,999	19	20.7
15,000 - 19,999	12	13.0
20,000 - 24,999	8	8.7
25,000 or over	17	18.5
<u>Sex</u>		
Male	36	36.4
Female	63	63.6

Table 15

Item Results of the Hypertension Test

	<u>Item</u>	<u>Score*</u>					
		<u>Zero</u>		<u>One</u>		<u>Two</u>	
		<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
1.	What risk factors are felt to increase your chances of developing high blood pressure.	6	6.0	73	73.0	21	21.0
2.	How can high blood pressure be detected.	15	15.0	29	29.0	56	56.0
3.	What are the early warning signs of high blood pressure.	45	45.0	20	20.0	35	35.0
4.	How is high blood pressure treated.	3	3.0	77	77.0	20	20.0
5.	High blood pressure causes.	2	2.0	68	68.0	30	30.3

Table continues

Table 15 (continued)

Item Results of the Hypertension Test

<u>Item</u>	<u>Score*</u>					
	<u>Zero</u>		<u>One</u>		<u>Two</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
6. Can high blood pressure be prevented.**	24	24.0			76	76.0
7. High blood pressure is more common in whites than blacks.**	20	20.0			80	80.0
8. When can a person on medication for high blood pressure stop taking it.	11	11.0	12	12.0	77	77.0
9. What does the term high blood pressure mean.	38	38.0	12	12.0	50	50.0
10. What does the term hypertension mean.	38	38.0	11	11.0	51	51.0

Table continues

Table 15 (continued)

Item Results of the Hypertension Test

Note: * Score: Zero = no correct responses identified

One = identified some correct responses but not
all/or identified all correct responses
but also indicated incorrect ones.

Items 6 and 7 were scored as correct or incorrect only. The remaining items were multiple choice questions with one or more correct answers and were scored as indicated in the legend of the table.

Items 1, 3, 4 and 5 proved somewhat troublesome for the participants in selecting the correct response. On these items, only 20-30% of the participants identified the correct response. In addition, a range from 20-77% of the respondents identified a partially correct response. Given the clarity and validity of the questionnaire, this finding indicates inadequate knowledge of hypertension among the participants to answer appropriately questions regarding risk, detection, and treatment of high blood pressure. In the remaining items (2, 6-10), the participants responded correctly 50-80% of the time. Although somewhat more favorable, this finding still reflects a general deficit of knowledge of high blood pressure.

Table 16 depicts the participants' use of various sources for gaining health information. Eighty-four percent of the respondents indicated they used their family doctor for this purpose. Nurses and pharmacists were reportedly used by a fourth of the respondents; other sources used were less frequently. "Other" sources included use of medical books and dictionaries.

Table 16

Sources Used to Gain Health Information

<u>Source</u>	<u>Used</u>		<u>Not Used</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Family Doctor	84	84.0	16	16.0
Nurse	25	25.0	75	75.0
Close Friend	15	15.0	85	85.0
Drug Store	19	19.0	81	81.0
Pharmacist	26	26.0	74	74.0
Other	17	17.0	83	83.0

Chapter 4

Discussion

In reference to the question of black's knowledge of hypertension, the survey data generally indicates that blacks do not have adequate knowledge of this disease. Only 50-80% of the respondents answered any single question correctly. Deficiencies in knowledge were especially noted in the ease of detection, treatment, and predisposing risk factors of this disease. This was demonstrated when items 1, 3, and 4 respectively were answered correctly by only 20-35% of the respondents. In the diagnosis of hypertension, a large portion of blacks (45%) still feel that symptoms are a necessary phenomenon. Contrastingly, for detection of the presence of the disease, 57% concur that actual blood pressure measurement is necessary.

In the area of treatment, the results indicate that most blacks (77%) are unaware of appropriate treatment methods for hypertension. However, of the three appropriate selections listed in the questionnaire, usual responses included medication as a form of treatment; but they failed to recognize other equally important treatment measures. The majority (76%) of the respondents also felt that hypertension could be prevented. Although vague in its implication, this finding suggests that blacks feel preventive health care measures are advantageous. Seventy-seven percent of the respondents answered appropriately the question regarding discontinuance of medication regimen.

In distinguishing the prevalence of the disease, 80% of the respondents realized that hypertension was more common in blacks. This finding may indicate that hypertension prevalence in blacks has been well communicated.

Although a majority of the respondents (68%) realized that hypertension causes other illnesses, fewer of them (30%) were able to accurately identify those illnesses.

Another step used to measure blacks' understanding of high blood pressure was to ask the respondents to identify the definition of the terms "high blood pressure" and "hypertension." Only 50% of the respondents identified the correct meaning of each term. In defining hypertension, many respondents (38%) still have the erroneous perception that it means "too much tension and/or worry." In defining high blood pressure, an equal percent equate this term to mean "too much blood in the body and/or pressure on

blood vessels." These data suggest at best a minimal understanding of high blood pressure by 50% of blacks.

The relationship of knowledge as a function of income (socioeconomic status) approached statistical significance ($p = .06$). The mean scores of the respondents, however, clearly demonstrated the higher the income level the more knowledge they possessed of hypertension. This finding suggests the higher the income level, the greater the access to medical care, thus, impacting an increase in health knowledge.

As presented in Table 11, larceny leads as the major crime committed in this community with homicide and auto theft following. According to the 6th District Police Department (Dec. 1989), the crimes committed 90 percent of the time are drug related. There are neighborhood watch programs among others but the police department feels the community is so infested with the illegal sale and usage of drugs the programs do very little to help.

Studies conducted with black children and adolescents suggest that high parental social status, as measured by education, occupation and area of residence, is associated with lower blood pressure in black children and adolescents.

In the numerous studies that have been documented, insufficient attention was given to the relationship between psychosocial job stressors and hypertension risk in black Americans. Specifically, regarding the potential effects of unemployment, low job security, and low job satisfaction. It was also felt that insufficient attention was given to the relation

between social supports and risk for hypertension in blacks. In particular, the quality and stability of important social bonds, especially marriage.

It may appear that the picture for this black community is a rather negative and pessimistic one, that the community is totally described by its frustrations and stress factors. The positive, healthy and wholesome attributes of other black communities outnumber substantially its negative ones. It is not difficult to document any number of cases where blacks have maintained their identity and fought frustrating barriers.

The implications of this study suggest a need to better educate blacks regarding hypertension. It also implies a need to employ more direct teaching methodologies to ensure comprehension and acceptance. A means of providing this information to all socioeconomic educational levels and ages of the black population is also essential. Increased efforts should also be made to educate blacks regarding various illnesses caused by hypertension. The financial cost to society in providing treatment for victims of end-stage renal, cerebrovascular, and heart disease is phenomenal (Mid-American Transplant, 1989, November). This cost may be greatly reduced by education, detection, and treatment of hypertension.

Limitations of the Hypertensive Study

The limitations of this study include an inability to generalize the findings to the community at large because of the homogeneity and size of sample. The sample was also overly representative of females, perhaps because it was drawn from a

church population and required church attendance as a variable for inclusion. Also, selection of the subjects from a church population does not provide for representation of the community as a whole. In addition, the fact that researcher had to gain access to the sample (church congregations) by means of using ministers as intermediaries, may have resulted in a decrease in the size of the sample.

Recommendation for Further Study

It is recommended that the study be replicated in this black community, using a larger and more diverse population.

Appendix A

Hello,

My name is Pat Parrish, I am a graduate student working on a research project at Lindenwood College. I would very much appreciate your cooperation in a study I am conducting. The purpose of this study is to look at the level of knowledge blacks have on the subject of High Blood Pressure.

I am attempting to survey a total of 300 black adults, from six churches in the area, with black members in its Congregation.

Your participation will involve completion of a questionnaire. Your answers to the questions in this survey are completely anonymous. There will be no way to connect your answers to you personally. Also, your participation in this survey is completely voluntary, you may withdraw from participation at any time. The alternative to participation in this study is non-participation. Information gained from this questionnaire will be used for the purpose of the study only.

You will not be requested to sign a consent form. Your act of reading these instructions, completing and returning the questionnaire is interpreted as informed consent.

The results of this study will contribute to the knowledge of health care workers what is understood by blacks, regarding high blood pressure. I will be happy to share the results with your congregation after completion of the study, if desired.

The questionnaire takes approximately fifteen (15) minutes to complete, please follow the instructions above each section. If you have any questions concerning this study or your participation in it, please feel free to ask. There are no foreseeable risks involved with your participation in this study.

Thank you for your time.

Pat Parrish

Appendix B

QuestionnaireSection I - Background Information

This section will be used to help describe the participants. Do not place your name anywhere on the questionnaire. All answers will be kept confidential.

Please mark an (X) in the box to the left of the answer that best describes your situation.

1. What is your age?
 - 20 to 30 years of age
 - 31 to 40 years of age
 - 41 to 50 years of age
 - 51 to 60 years of age
 - 71 or above

2. What is your highest level of education completed?
 - Grades 1-6
 - Grades 7-9
 - Grades 10-12
 - Any college (please specify)
 - College degree
 - Advanced degree
 - Other

3. In what range is your yearly income?
 - Under 5,000
 - 5,000 - 9,999
 - 10,000 - 14,999
 - 15,000 - 19,999

20,000 - 24,999

25,000 or over

4. What is your sex?

Male

Female

Section II

This section will be used to determine how much information you have about high blood pressure.

Please mark an (X) in the space provided for the correct answer. (In some cases, more than one answer may be correct).

1. What risk factors are felt to increase your chances of developing high blood pressure?

Being overweight

Eating too much salt

Family trait (parents had high blood pressure)

Working too much

Not getting enough sleep

2. How can high blood pressures be detected?

By taking an actual measurement of the blood pressure

By experiencing symptoms

By how fast your heart beats

3. What are the early warning signs of high blood pressure?

Blurred vision

Dizzy spells

Headaches

There may be no warning signs

4. How is high blood pressure treated?
- Decreasing the amount of salt used in the diet
 - By weight loss
 - Medication
 - Learning how to stop worrying
5. High blood pressure causes
- Heart attack
 - Stroke
 - Kidney problems
 - No health problems
6. Can high blood pressure be prevented?
- Yes
 - No
7. High blood pressure is more common in whites than in blacks?
- True
 - False
8. When can a person on medicine for high blood pressure stop taking it?
- If his blood pressures returns to normal
 - If he/she feels better
 - If the medicine makes you sick
 - You should not stop taking it without your doctor's advice and knowledge.
9. What does the term high blood pressure mean?
- Heart beating too fast
 - Pressure on blood vessels

- Too much blood in the body
- Don't know
10. What does the term Hypertension mean?
- Too much tension
- Too much worry
- Blood pressure high
- Don't know
11. Do you use any of the sources listed below for health information?
- Please check all that apply.
- Family doctor
- Nurse
- Close friend
- Drug store
- Pharmacists
- Other, please specify _____
12. In the last year would you say you have?
- Learned a great deal about high blood pressure
- Learned something about high blood pressure
- Learned nothing new about high blood pressure
13. Where do you hear or read most of your everyday news?
- _____
14. When was the last time you had your blood pressure checked?
- In the last three months
- Between three months and one year ago
- Greater than one year ago
- I don't remember

Never

Section III

1. Have you ever read a pamphlet on high blood pressure?

Yes

No

If yes, did you find it helpful in explaining high blood pressure?

Yes

No

2. Have you ever seen a television commercial or program on high blood pressure?

Yes

No

If yes, did you find it helpful in explaining high blood pressure?

Yes

No

3. Have you ever read a newspaper article on high blood pressure?

Yes

No

4. Have you ever heard a radio program about high blood pressure?

If yes, did you find it helpful in explaining high blood pressure?

Yes

No

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