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ABSTRACT

This research report examined the distribution and incidence of disabilities among minority communities. A review of literature is provided including relevant statistics on the prevalence of disabilities in African Americans and Hispanic Americans. The study used data from the National Health Interview Survey (n=122,859) to determine the prevalence of disability. The association between race/ethnicity and other characteristics (sex, age, education, family income, marital status, employment, and geographic region) is examined. Disability was divided into four categories: chronic debilitating health conditions; physical, sensory, and language impairments; mental disorders; and nervous system disorders. Several tables are provided to show association between variables. Among the results were: the overrepresentation of African Americans and Hispanic Americans with chronic health conditions; African American overrepresentation for mental retardation and other nervous system disorders; a high proportion of subjects from each of the disability categories residing in the South; and the generally low incomes of people with disabilities from minority groups. (Contains 30 references.) (CR)

DISABILITY PREVALENCE AND DEMOGRAPHIC ASSOCIATION AMONG RACE/ETHNIC MINORITY POPULATIONS IN THE UNITED STATES: IMPLICATIONS FOR THE 21ST CENTURY

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PREFACE

While it is true that individuals with disabilities who are members of racial and ethnic minority groups encounter the same challenges as other individuals with disabilities, these persons face special and unique problems because of socioeconomic, health, cultural, and other factors. In addition, prejudice, discrimination, and economic barriers continue to exclude a great number of minority persons from full participation in all aspects of society. However, relatively little research has been conducted in order to examine specific variables relative to ethnicity, disability and health status, income, education, geographic location, employment, and marital status.

Research conducted by Bowe (1985), Thornhill and HoSang (1988), and Walker (1988) has documented the fact that disability is significantly higher among African-Americans and other minority groups. The poverty rate for African-Americans (31.37%) and Hispanics (29%) is almost three times as high as it is among Whites (11%) in America. Data concerning poverty rates are consistent across all age groups. The correlation between low socioeconomic status and disability is well documented, thus, low socioeconomic status families are at greater risk for disabilities throughout the life cycle (including the pre-, peri- and post-natal periods). During the 1980s, the number of poor minority children and other dependent populations increased substantially.

The problems of non-White persons with disabilities are indeed complex, not only do they face excessive economic burdens, but in addition, adequate education is frequently not available. In many instances, access to health care facilities, community agencies, stores, schools, and transportation can only be acquired through the use of extreme measures. In addition, language, cultural, and attitudinal barriers impede access to needed resources. As a result of these circumstances, the minority person with a disability frequently finds him/herself set aside from the mainstream of everyday life. The unique status of non-White persons with disabilities tend to compound their disability problems.

Research conducted by Bowe (1985), O'Connell (1987), and Walker (1986) reveals that a substantial number of minority persons with disabilities are clustered in specific geographic locations. For example: at least 50%

of all African-Americans live in the south, 40% of Hispanics reside in the west and southwestern regions of the United States, whereas, approximately 46% of the American Indian population live on reservations. Geographic distribution and available resources have significant implications relative to the provision of health care, special education, rehabilitation, and related services. The current study examines the status of ethnic/racial minority persons in four disability categories (chronic health conditions; physical, sensory, and language impairments; and mental and nervous disorders) from a number of perspectives.

Following the exploration of a number of reference variables (including gender, age, education, family income, marital status, employment, and geographic region), the study concludes with a discussion of several policy implications. As we approach the end of the 20th Century, people with disabilities (including those who are members of minority groups) ask for the opportunity to be recognized as human beings who have the capacity to love, to share, to create, to work, to live fruitful lives, and to contribute to society. The challenge for America is to provide the environment for all persons with disabilities to do so. The passage of the Americans with Disabilities Act, and the development and implementation of appropriate, relevant, and creative approaches to rehabilitation are good foundations for America's success as we approach the 21st Century.

This report is founded on the principle that all individuals can benefit from the implementation of relevant research and appropriately designed special education, rehabilitation and related services (no matter where they reside, their ethnic identity or the severity of their disability and/or economic status).

Sylvia Walker, Ed.D.

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This publication is dedicated
to the memory of
Dr. Milton Wilson, Jr.
of Xenia, Ohio

Disability Prevalence and Demographic Association Among Race/ethnic Minority Populations in the U.S.: Implications for the 21st Century

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INTRODUCTION

There are over 40 million persons with disabilities residing in the United States. Accordingly, one in every six American has some type of disability. Despite the outpouring of literature reflecting the disability status of individuals in this society, there is a dearth of empirically based evidence concerning the prevalence and distribution of disability among ethnic minority populations. A critical issue to be dealt with by policy makers is the documentation of comprehensive, unbiased studies of specific types of disability among ethnic minority groups in proportion to their representation in the population. There is general consensus based on available global evidence which suggests that disability rates have escalated more in the minority than in the non-minority population (Anderson, 1988; Bowe, 1985; Hopkins, 1988; Thornhill & Torres, 1986). In this report, the term ethnic minority populations includes African-Americans, Hispanic-Americans, and the combination of Native and Asian Americans into a category called "other."

The specific types of disability were chronic debilitating health conditions; physical, sensory, and language impairments; mental disorders; and disorders of the nervous system.

Several factors have been suggested as contributing to higher disability rates within minority populations. Among these are poor prenatal and perinatal care, nutrition and diet, an inaccessible health care system, greater risk for physical injury in terms of living conditions and types of employment situations, and finally, a lack of proper health care knowledge and education. It is needless to say that a complete and comprehensive examination of the major variables related to disability among ethnic minority populations will probably show that the foregoing variables and other influential factors have all come to bear on the plight of these target groups. In particular these factors have played a significant role in contributing to the prevalence and impact of disability among ethnic minority groups.

Given the urgency of acquiring sufficient data to address the nature and extent of the problem, it would appear to be fruitful to specify who are the disabled, how many persons with disabilities we have, and how these individuals are situated and embroidered into the larger social fabric of society. Thus, this initial attempt to study the prevalence and distribution of disability among ethnic minority populations is a critical starting point in

developing initiatives geared to finding solutions to the challenges faced by people with disabilities. Furthermore, this effort is important in laying the groundwork for more systematic and vigorous testing of innovative and culturally viable approaches, perspectives, and strategies relevant to the needs of the minority populations.

REVIEW OF RELATED LITERATURE

Several investigators have reported that conventional types of disability are approaching alarmingly high rates, and current estimates suggest that the distribution of disability in minority populations far exceeds that of the non-minority population (Anderson, 1986; Hopkins, 1988; Thornhill & Torres, 1986; Walker, 1988).

African-Americans represent a large segment of the disabled population in America. More specifically, African-Americans between the ages of 16-64 constitute a proportionately larger segment of the disabled population than any other ethnic group in the country. Moreover, one out of every seven African-Americans reports having a work disability. Of this population, working-age African-American women with disabilities comprise 53.9 percent of the population while African-American males constitute 46.1 percent (Bowe, 1985a).

It is essential to note that the Hispanic-American population is the fastest growing segment of the disabled working-age ethnic minority population. According to Bowe (1985b), one out of 20 persons between the ages of 16 and 64 in the general population is Hispanic-American and one out of 12 Hispanic-Americans has been reported as having a work disability.

The prevalence of chronic disability related illnesses and conditions is higher among African-Americans than other ethnic groups (Thornhill & HoSang 1988; Thornhill & Torres, 1986). For instance, it has been reported that (in New York City which has a high number of African-Americans and other minority groups) the incidence of new cases of tuberculosis in 1986 was 130.4 per 100,000 in the population, the premature birth rate was 20.5 percent of live births, and the death rate for 12 out of 13 common causes of death was the highest in the Nation in the Borough of Manhattan in New York City. These health related statistics have profound implications for such disability related issues as excess prevalence, expensive rehabilitation, and a squandering of human potential (Thornhill & HoSang, 1988).

In both public and private agencies, the percentage of persons with physical, sensory and language impairments (i.e., amputee, blindness, hearing impairment, orthopedic impairment, speech impairment, and visual impairment) among African-Americans is two and sometimes three times the

proportion for the other remaining ethnic minorities. Specifically, according to Walker, Akpati, Roberts, Palmer, and Newsome (1986), African-Americans had the highest prevalence rates among all ethnic minority populations across certain geographic regions (i.e., South, Northeast, Mid-Atlantic) for particular physical, sensory and language impairments (i.e., blindness, visual impairment, orthopedic impairment, and amputee). Moreover, African-Americans also had the highest prevalence rates in the Midwest geographic region for all physical, sensory and language impairments except visual impairment. The exception in this region applies to Hispanic-Americans who had a slightly higher prevalence rate for visual impairment than African-Americans. In the West geographic region, Hispanic-Americans had the highest prevalence rates for all physical, sensory and language impairments except blindness.

It has been speculated that physical impairment is often perpetuated as well as aggravated by poverty (Thornhill & Hosang, 1988). Given this assumption, most ethnic minority persons with a disability are at high risk given that a larger percentage of this population fall at or below the poverty level. In Central Harlem in New York City, the most prevalent impairments observed by the Harlem Hospital Center were various types of musculoskeletal disorders. Some examples of the musculoskeletal impairments reported by the Harlem Hospital Center were fractures and a

large percentage of amputees. According to Thornhill and HoSang (1988), the most prevalent causes of these types of impairments were trauma (31%), and various types of arthritis (10%). Additionally, 6.8% of the ethnic minority patients treated at the Harlem Hospital Center indicated a direct connection between their disability and substance abuse involvement.

An examination of mental health status among ethnic minority populations revealed that Hispanic-Americans had the highest prevalence of mental disorders and experienced a higher incidence of major psychiatric disorders than the general population (Acosta, 1977). It was also revealed that although Hispanic-Americans were diagnosed as schizophrenic less than African-Americans, the incidence of affective disorders and "other psychoses" were more prevalent among Hispanic-Americans (Adams, Dworkin, & Rosenberg, 1984). This report has been supported by Jones, Gray and Parson (1983), who stated that Hispanic-American patients had a manic-depressive illness rate three times higher than the national admission rate. However, the Adams, Dworkin and Rosenberg (1984) study conflicted with that of other investigators who have reported that African-Americans encounter manic-depressive illness at a rate four times higher than the national average (Jones, Gray & Parson, 1981). In addition, African-Americans have a higher prevalence of schizophrenia (Adebimpe, Klein, & Fried, 1981; Mukherjee,

Shukla, Woodle, Rosen, & Olarte, 1983); have higher manic-depression illness rates, and higher depression scores (Jones, Gray, & Parsons, 1981; Torks, Paykel, & Klerman, 1970; Warheit, Holzer, & Schwab, 1973) than other racial groups. These reports are questionable in that it has also been revealed that African-Americans and Hispanic-Americans are more frequently misdiagnosed and inappropriately treated than European-Americans (Jones, & Gray, 1986).

It has also been found that the prevalence of particular types of nervous disorders varies considerably from one racial and ethnic group to another. Along racial lines, African-Americans had higher age adjusted prevalence ratios for cerebral palsy, epilepsy, stroke, and dementia than other racial groups. In addition, more African-Americans with a functional disability experienced persistent afebrile seizures than other ethnic groups with a functional disability. Nevertheless, proportionately more persons who were members of other racial/ethnic groups and who also had a functional disability were more often institutionalized than African-Americans (Haerer, Anderson, & Schoenberg, 1984, 1986a, 1986b).

Not only have general attempts been made to improve the rehabilitation of ethnic minority populations, but specific attempts have also been made to target particular ethnic groups for special programs (Ruiz, 1983; Walker, 1988). Since this literature review has focused primarily on

African-Americans and Hispanics with disabilities, those interested in specific information regarding the needs of Pacific Islanders, Native Americans, and other ethnic groups with disabilities are directed to the research conducted by Bielecki and Jones (1986), Cummings, Huntley, Kelly and Varney (1986), Hodge (1990), Lonetree (1990), Morgan and O'Connell (1987), O'Connell (1987), and the U.S. Bureau of the Census (1985). There is a definite need for research which provides increased information about Asian-Americans and other underrepresented groups.

Given that the data accumulated thus far is relatively sparse, further research is needed in order to provide a more global analysis of the prevalence and distribution of disability among all minority populations.

THE PROBLEM

The purpose of this study is to determine the prevalence of disability and the association between race/ethnicity and other characteristics among selected race/ethnic minority groups who have such disability. More specifically, this is an attempt to discover who and where these individuals are, what disabilities they have, and to examine the demographic characteristics of these persons. In this report the term "disability" is used broadly to refer to (1) chronic health conditions, (2) physical, sensory and

language impairments which hinder or interfere with normal or usual functioning, (3) mental disorders, and (4) nervous system disorders.

Objectives of the Study

The objectives of this study are as follows:

1. To gather prevalence data on disability rates among major race/ethnic groups in the United States including African-Americans, Hispanic-Americans, Native-Americans, Asian-Americans, and Pacific Islanders.

2. To gather prevalence information relative to various kinds of demographic distribution for selected types of disabilities among race/ethnic minority groups in the United States.

3. To document the extent of association between race/ethnicity and selected demographic variables within each of four types of disability category groupings.

Research Questions

In this investigation the conceptual framework was operationalized by translating the objectives into the following research questions:

1. What are the specific disability rates among race/ethnic minority populations compared to Whites?

2. What are the specific disability rates for race/ethnic groups (including Whites) according to geographic region (Northeast, East, North Central, South, West)?

3. What are the specific disability rates for different types of disability among race/ethnic minority groups in the United States.

4. What are the relationships among the specific types of disability and demographic characteristics such as age, family, income,

sex, marital status, education, employment and geographic location?

Definition of Terms

Disability: A general term which, in this study, refers to any long- or short-term reduction of a person's activity or function as a result of acute or chronic physical or mental limitation.

Prevalence: The extent and general widespread existence of a single health condition or class of conditions which are known to be disabling or to contribute to the eventual development of a disability.

Distribution: Allocation of and accounting for the occurrence of disability on the basis of categorical subdivision and stratification, (i.e. the frequency of occurrence in a designated area, class, or level).

Age: Age at last birthday.

Chronic Conditions: Conditions that either a) were first noticed three months or more before the reference date of the interview, b) belong to a group of conditions that are considered chronic regardless of when they began or, c) are the type of conditions that obviously have a duration of more than three months.

Physical, Sensory and Language Impairments: A chronic or permanent condition, usually static in nature, that results from disease, injury, or congenital malformation. It represents an absence, decrease in or loss of ability to perform various functions, particularly those of the musculoskeletal system and the sense organs.

Mental Disorders: A clinically significant behavioral or psychological syndrome typically associated with distress or impairment of function. The mental disorders selected for inclusion in the present study are schizophrenia, affective psychosis, and "other" psychoses.

Schizophrenia: A mental disorder in which a deterioration from a previous level of functioning is observed. This condition is not due to an affective or nervous disorder and onset is prior to age 35 with patients often reporting delusions, hallucinations, or thought disturbances.

Affective Psychosis: A disorder characterized by a disturbance of mood, accompanied by a full or partial manic or depressive syndrome that is not caused by any other physical or mental disorder.

"Other" Psychoses: In the present study, this category includes Alzheimer's Disease, senile dementia, involutional melancholia, and pure paranoia.

Nervous Disorders: Pathological chronic degenerative conditions originating in the central nervous system. This study focused on the following nervous disorders: mental retardation, epilepsy, cerebral palsy, Parkinson's Disease, multiple sclerosis, and "other" disorders.

Race: Racial classification is based on the respondent's description of his/her racial or ethnic background. For the purpose of this study, the population is divided into four groups, "White", "African-American", "Hispanic-American", and "other." "Other" includes American Indians, Asians, and Pacific Islanders.

Family Income: The total of all income received by the respondent's household during the 12-month period preceding the week of the interview. Income from all sources (wages, salaries, rents from properties, pensions, and help from relatives) are included.

Employment Status: Employment status is divided into three categories: "not in labor force," "employed," and "unemployed." Employment includes paid work as an employee of someone else, self-employment in business, farming, or professional practice, and unpaid work in a family business or farm. Respondents not in the labor force are those who are a) receiving revenue from an enterprise, but not participating in its operation, b) doing housework or charity work for which they receive no pay, c) seasonal workers during the portion of the year they were not working, and d) not working, even though they have a job or business but are on layoff. Unemployed respondents were those not receiving income from sources listed previously under "employed."

Marital Status: Respondents were grouped into six categories of marital status: 1) married-spouse in household, 2) married-spouse not in household, 3) widowed, 4) divorced, 5) separated, and 6) never married.

Geographic Region: The states under study were grouped into four regions. They are Northeast, Midwest, South, and West.

Northeast: Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania.

Midwest: Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Kansas, and Nebraska.

South: Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Oklahoma, Arkansas, and Texas.

West: Washington, Oregon, California, Nevada, New Mexico, Arizona, Idaho, Utah, Colorado, Montana, Wyoming, Alaska, and Hawaii.

Criteria for Variable Selection

In this investigation, the term "disability" was operationalized using (1) chronic debilitating health conditions, (2) physical, sensory and language impairments which hinder or interfere with "normal" or usual functioning, (3) mental disorders, and (4) nervous system disorders. This was further refined by selecting and including specific conditions, impairments, mental disorders, and nervous system disorders.

The criteria for selection of conditions and impairments were as follows:

Chronic Condition - A health condition was included if it was chronic and its adverse effect on normal function was generally presumed to be progressive over time. The condition must also have a high incidence of occurrence in the general population and must be in a category where at least 70% of

persons having the condition are required to see a physician on a regular basis.

Impairment - This category was based on the criterion that the existence of the impairment must be behaviorally apparent when elicited or otherwise observed, although not necessarily degenerative to the point of requiring regular care by a physician. There must also be a relatively high incidence of occurrence of the impairment in at least one or more ethnic subgroups to the point of restricting or impeding activity on an average of 18 days per year.

All demographic variables were included primarily on the basis of their relevance to the objectives of the study and the research questions as stated.

Variable Types

In this study, there are two sets of variables. The first set was labelled, "Focal Group Variables," and the second was called "Reference Variables." The focal group variables were chronic health conditions, impairments, mental disorders, and nervous disorders. The reference variables were age, sex, income, education, employment, marital status, geographic region, and race/ethnicity.

The focal group variables were further sub-divided to include seven types of chronic debilitating health conditions: heart disease, cerebrovascular disease, respiratory disorder, arthritis, intervertebral disc disorders, diabetes

and high blood pressure; six types of physical, sensory and language impairments: hearing, orthopedic, visual, paralysis, absence of extremities and speech disorder; three types of mental disorders: schizophrenia, affective psychosis and "other" psychoses (which included senile and presenile organic psychosis); and six types of nervous disorders: mental retardation, cerebral palsy, Parkinson's disease, epilepsy, multiple sclerosis, and other degenerative and hereditary disorders of the central nervous system.

The reference variables were also further sub-divided to include different categories (levels and ranges) for particular variables. For example, the range for "age" is from under six years to 75 years and over. The range for the variable "income" is from under $5,000 per year through $50,000 or more per year. Marital status includes the categories married, spouse at home; married, spouse not at home; widowed; divorced; separated; and never married. Employment was divided into those currently "employed," "unemployed," and "not in labor force." Race/ethnicity was categorized as White, African-American, Hispanic-American and "other;" while sex was divided into male and female.

DESIGN AND METHODOLOGY

The primary data source was the National Health Interview Survey (NHIS) used to generate information for the National Center for Health Statistics. This information covers a broad range of demographic and health factors. Essentially, the sampling procedure was multi-stage and based on primary sampling units selected in such a way as to insure accurate representativeness.

Sample

The sample for this study was comprised of 122,859 persons who had been interviewed from 49,569 households in 1987. The target population for NHIS was the resident, civilian noninstitutionalized population residing in all 50 states and the District of Columbia.

Description of the Instrument and Procedures Used in Collecting and Processing the Data

The NHIS questionnaire contains two major parts. The first consists of topics that remain relatively the same from year to year. Among these topics are the incidence of acute conditions, the prevalence of chronic health conditions, restrictions in activity due to impairment or health problems, and utilization of health care services involving physician care and short-stay hospitalization. The second part consists of special topics added as supplements to each year's questionnaire.

Careful procedures were followed by the National Center to assure the quality of data collection in the interview. Data were collected on a weekly basis. Most households in the sample had been contacted by mail before the interviewers arrived. Potential respondents were informed of the importance of the survey and assured that all information obtained in the interview would be held in strict confidence. Interviewers made repeated trips to a household when a respondent was not immediately found.

Field operations for the survey were conducted by the U.S. Bureau of the Census which participates in the survey planning, selects the sample and conducts the interviews. Completed questionnaires were sent from the U.S. Bureau of the Census field offices to NCHS for coding, editing, and analysis. To ensure the accuracy of coding, a five-percent sample of all questionnaires were recorded and keyed by other coders. A 100-percent verification procedure was used if certain error tolerances were exceeded. Staff of the Division of Health Interview Statistics then edited the files to remove impossible and inconsistent codes.

Reliability and Types of Estimates

Because NHIS estimates are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete Census had been taken using the same survey processing procedures. To the

extent possible, sampling and non-sampling errors were kept to a minimum by methods built into the survey procedures. Although it is very difficult to measure the extent of bias in the NHIS, a number of studies have been conducted to examine this problem. The results have been published in several reports.

As noted, the sample represented the resident, civilian noninstitutionalized population of the United States. It should be pointed out that the sample did not include persons residing in nursing homes, members of the armed forces, institutionalized persons, or U.S. nationals living abroad. As data were collected, the samples were consolidated to produce quarterly files (each consisting of data for 13 weeks). Weights to adjust the data to represent the U.S. population were assigned to each of the four quarterly files. These quarterly files were later consolidated to produce the annual file, which is the basis of most tabulations of NHIS data.

Sampling Errors

The chances are about 68 out of 100 that an estimate from the sample would differ from a complete Census estimate by less than the standard error. Individual standard errors were not computed for each estimate in this report. Instead, standard errors were computed for a broad spectrum of estimates. Regression techniques were then applied to produce equations from which a

standard error for any estimate can be approximated. The nature of the sampling plan made it necessary to use special weights in the data processing and statistical analyses. These weights were provided by the National Center for Health Statistics as an essential part of the documentation.

RESULTS

Prevalence Description

Chronic Health Conditions

Sex. The percentage who are female in the population with chronic health conditions (58%) is far in excess of the percentage for male (42%). Within this group, the disparity between the percentage of African-American males and females is even more pronounced with 36.4% and 63.6% respectively. This is the largest male/female percentage difference among the four racial and ethnic groups and strongly suggests that African-American females are more at risk for these conditions than any other minority sub-group.

Age. The age intervals with the largest percentages of persons with chronic health conditions are 65-74 (24.5%), 55-64 (22.1%), over 74 (16.4%) and 45-54 (12.9%). This shows a slight tendency for the existence of chronic conditions to be somewhat related to increasing age. Especially striking is the

observation that at younger age levels in the chronic conditions groups, Whites are underrepresented in proportion to their number in the population while Hispanics and African-Americans are overrepresented. This trend is observed until old age (65 and over) when the proportion of Whites with chronic health conditions exceeds the proportion of others in the population and the proportion of African-Americans and Hispanics becomes less than their population proportion. The general trend for all sub-groups appears to be, however, that the frequency of chronic health conditions increases with age until about the time of retirement from the work force.

Education. The chronic health conditions population shows two characteristic bulges. These occur at the one-eight years of schooling category (25.3%) where most of the persons presently attending school are located, and again at the 12 years of schooling category (32.7%) where most of the persons who are no longer attending school are located. There is a tendency for Whites to have more education than either African Americans or Hispanics.

Family Income. Proportionately more Whites and fewer African-Americans and Hispanics were located at the upper family income levels. The opposite was true at the lower income levels with proportionately fewer Whites and more of the other ethnic groups. It is of particular interest also

that the median family income for Whites was approximately $19,000 per year, for African-Americans $10,000 per year, and for Hispanics $13,000 per year. For the total group of persons with chronic health conditions, the median was approximately $17,500 per year. Proportionately more African-Americans and Hispanics appeared to be on some type of public assistance or to be employed in low paying jobs.

Marital Status. Almost 60% of persons with a chronic health condition were married. Almost 21% were widowed, and it was especially interesting that a larger percentage had never been married (8.8%) than were divorced (7.7%). Although the percentage of African-Americans who were married (44.6%) was much smaller than the percentage of Whites who were married (62.3%), the percentage of African-Americans and Hispanics who were either separated or had never been married was far in excess of the percentage for Whites in either of these categories. Over half of all persons with chronic health conditions were married Whites with the spouse living in the household. The next largest category was widowed Whites.

Employment. Almost 66% of the chronic conditions persons were not in the labor force. This includes approximately 40% who were at or past retirement age and over 5% who had not reached the legal age for employment. Thus, it appears reasonable to conclude that at least 20% of the

chronic conditions population were probably unable to work. The proportion of African-Americans who were not in the labor force (68.4%) was slightly higher than it was for the other groups. The unemployment rate was highest, however, for Hispanics than for any other group.

Geographic Region. The south leads the other geographic regions in the proportion of the chronic conditions population (37.2%). It is especially noteworthy that over 54% of all African-Americans with chronic health conditions reside in the south. This contrasts with 35.2% of Whites with chronic conditions in the south, and 31.3% of Hispanics with chronic conditions who reside in the south. Considering the preponderance of Hispanics in the west and African-Americans in the south, the geographic distribution of chronic conditions tends to reflect the distribution of the larger population.

Physical, Sensory, and Language Impairments

Sex. The percentage of the physical, sensory, and language impairments population who were female was 47.4%. The percentage who were male was 52.6%. This contrasts with the chronic conditions population where the percentage of females was far in excess of the percentage for males. Across all racial and ethnic sub-groups, the percentage of males and females was almost evenly divided and there did not seem to be any

systematic relationship between physical impairments and gender.

Age. The age intervals with the largest percentages of the physical, sensory and language impairments population are 35-44 (16.1%), 25-34 (15.2%), 55-64 (15.7%), and 65-74 (14%). Over 60% of the impairments population is between the ages of 24 and 74. Furthermore, more than two-thirds of impaired persons are working age. The proportion of persons with physical, sensory, and language impairment tends to be lower at the younger age levels and to increase with age up to about 35-44. It then drops slightly and remains stable until after the age of 74.

Hispanics tend to have a higher proportion of physically, sensory, and language impaired persons at the 25-34 age range while African-Americans have their highest percentage at the 45-54 age range. Among Whites, the percentages are about evenly dispersed across the ranges of 25-34, 35-44, 55-64 and 65-74. For some obscure reason there is a drop among Whites at the 45-54 age range. This may be a reflection of the fact that, among Whites at least, proportionately fewer children were born during the years 1932 to 1942. The increase in the percentage of persons with impairments commensurate with increase in age shows some interesting discrepancies. For example, among Whites and Hispanics the increase tends to peak at the age 25-34. Among persons age 65 and older, there was a much higher proportion who

were White than were African-American, Hispanics or "Other." This is probably a direct result of better health care and greater longevity among Whites in comparison to the other race/ethnic subgroups.

Education. The two characteristic bulges are again seen at the 1-8 years of schooling category (19.4%) and the 12 years of schooling category (33.4%). The percentage at the 1-8 year level is much lower than it is for the chronic conditions population. By far, the largest single category according to race/ethnicity and amount of education is seen for Whites with 12 years of schooling (28.8%). Although the college graduate group is only 7.2% of the total impairment population, it is interesting that 90% of this group is White and only 4% is African-American. African-Americans with physical, sensory and language impairments are much less likely than their White counterparts to have the benefits of a college education. To some extent, this is also true of Hispanics. There is a tendency for minority persons more so than Whites to be concentrated at the lower end of the educational spectrum and for proportionately more Whites to be at the upper end.

Family Income. The proportion of White persons with impairments at various income levels tends to increase commensurate with the increase in amount of money. Among African-Americans this tendency is reversed with corresponding reductions in the proportions as we go up

through the income levels. There is also an unusually large bulge for African-Americans at the under $5,000 income level. This evidence suggests that physical, sensory, and language impaired African-Americans are less well off economically than their counterparts in other racial/ethnic groups. The overall median family income for all impaired persons was $20,000. The median for Whites was $22,050, for African-Americans $10,800, and for Hispanics $16,500.

Marital status. Proportionately fewer impaired African-Americans with impairments were married than was seen for any other racial/ethnic group. On the other hand, African-Americans had a higher proportion of persons who had been widowed. African-Americans and Hispanics had the highest percentage of "never married" persons. It may be significant that among persons with impairments as a group, the percentage who had never married (14.2%) was larger than the percentage widowed (13.5%). The majority of the population with impairments was married with the spouse living in the household (60.2%). African-Americans comprised the largest percentage of the "separated" group (38.4%) far out of proportion to their numbers in the general population and in the population of persons with impairments.

Employment. Approximately 51% of the population of persons with physical, sensory, and language impairments were not in the labor force. This was considerably lower than the percentage of the population of persons with chronic health conditions (66%). The percentage not in the labor force may be taken to include approximately 6% who were below the legal age for employment and another 27% who were past the age of retirement. It is noteworthy that this leaves only 18% in the "not in the labor force" group after the other two types are accounted for. This net (not in the labor force) is very close to that which is found in the chronic conditions population. The percentage of Whites employed (47.3%) was very close to the percentage of Whites not in the labor force (49.8%). This was not true for African-Americans, however, where the percentage not in the labor force (64.6%) was far in excess of the percentage employed (31.7%). The unemployment rate was, as in the case of the chronic conditions population, higher for Hispanics than for any other group.

Geographic region. The south again takes the leadership in its proportion (34%) of the total population of impaired persons. The largest percentage of Whites with impairments was seen in the south (32.6%) as was the largest percentage of African-Americans with impairments (53.2%). The largest percentage of Hispanics with impairments was seen for the west

(40.6%). A high proportion of (60.1%) of minorities with disabilities in the other category (American Indians, Asian Americans, and Pacific Islanders) also resided in the Western Region. Generally, Hispanics and African-Americans tended to be overrepresented in the southern and western geographic regions. This may be a reflection of the distribution of the larger population.

Mental Disorders

Sex. Fifty-two percent of the mental disorders population was female compared with 48% male. Some interesting comparisons emerged, however, when ethnic groups were compared with each other. For example, among Whites 45% were male and 55% were female, whereas this trend was reversed among African-Americans where 60% were males and only 40% were females. Clearly there was a tendency for more males than females to suffer with a mental disorder in the African-American group. This tendency was also observed for the "Other" group as well. Generally speaking, there is a clear tendency for White females to experience mental disorder more often than White males, but for this tendency to be just the reverse among African Americans, Hispanics, and other minority groups. It should also be noted that the percentage of Whites with a mental disorder is below their proportion in the larger population while the percentage of African-

Americans with a mental disorder is slightly in excess of their proportion in the population.

Age. The age intervals with the largest percentage of persons with mental disorders were 24-34 (23.1%) and 35-44 (24.9%). Seventy-six percent of the mental disorders population were White and 14.5% were African-American, showing a tendency for Whites to be underrepresented and African-Americans to be slightly overrepresented in proportion to their numbers in the total population. Among Hispanics, the largest percentage of persons with mental disorders was observed for the 17-24 age group (36.4%). Among African-Americans, the largest percentage was seen in the 25-34 age group (32. %) and among Whites, the largest percentage was observed for the age group 35-44 (29.5%). An important finding is the fact that the percentage of persons with mental disorders appears to stabilize at about 8% after age 54. More specifically, the stabilization was observed at the age range 55-64 (8.2%), 65-74 *8%), and over 74 (8.6%).

Education. Two characteristic bulges in the proportion of persons distributed across the educational spectrum were again seen in the mental disorders population. As with other types of disability, these were observed for the 1-8 years of schooling level (14.4%) and the 12 years of schooling group. The proportional distribution of the four racial/ethnic groups more

nearly approximates the general population at the 12 years of schooling and the college levels. There were considerably more Hispanics at the lower educational levels and considerably fewer at the higher levels.

Family income. There are proportionately more persons at the under $5,000 (20.9%) and $25,000 - 34,999 (19.5%) income levels than at any place else along the family income distribution. Among Whites with mental disorders, the largest income distribution was seen for the income category of $25,000 - 34,999 (22.6%). Among African-Americans with mental disorders the largest percentage was seen at the family income levels of $10,000 - 14,999 (23.9%). The median family income for the total population of persons with mental disorders was $14,120. The median for Whites was $16,600, for African-Americans $10,500, and for Hispanics $13,500.

Marital status. The overwhelming majority of the population with mental disorders had never been married (40%). This percentage was followed by persons married with the spouse in the household (28.1%). The percentage divorced (14.4%) was slightly higher than the percentage widowed (13.4%).

Employment. Over 76% of the population with mental disorders was not in the labor force and only 21% were employed. This underscores the devastating impact of mental illness on society. Among those who were

employed the overwhelming majority (84.7%) were Whites, contrasted with 4% African-Americans and 7.8% Hispanics.

Geographic region. Unlike other types of disability, the south does not lead in the percentage of persons with a mental disorder. The midwest had the highest proportion of persons with mental disorders (32.4%), whereas the south ranked second with 30.8% of persons in this category. The west had the lowest percentage (15.4%) of persons with a mental disorder. Among Whites and African-Americans, the largest proportions were in the south and midwest while for Hispanics the largest proportions were in the west and the northeast.

Nervous Disorders

Sex. In the population of persons with disorders of the nervous system 53% were male and 47% were female. Thus, these disorders are slightly more prevalent among males than females. Among Whites and Hispanics, nervous disorders were more evenly distributed by sex than for African-Americans where the percentage of males was 60% compared to 40% female. As with some other types of disability such as paralysis, speech disorders, and orthopedic impairment, it appears that African-American males are more susceptible than African-American females. Moreover, the African-American representation in this group (15.5%) exceeds their proportion in

the general population of the United States. In the group labeled "Other," however, females appeared to be more at risk (60.1%) for disorders of the nervous system.

Age. The smallest percentage of persons with disorders of the nervous system was observed for the age group under 6 years (2.6%). The largest percentage was seen for the age 6-16 (22.1%). Percentages were approximately the same and about equally distributed across the other age intervals. African-Americans are overrepresented in proportion to their numbers in the general population at every interval until the age of 65 when, possibly due to early demise, they begin to be underrepresented.

Education. Once again, the largest percentage of the total population of persons within this disability category is seen at the levels of 1-8 years of school age (35%) and 12 years of schooling (22.9%). These bulges are probably more an artifact of the distributions of numbers of persons than of any relationship between these disorders and education. As we go up the education ladder, the percentage of Whites tends to increase while for African-Americans and Hispanics it tends to decrease. This further substantiates the fact that Whites generally receive more education than other groups in our society.

Family Income. Among persons with disorders of the nervous

system there is considerably less variation across the different income levels. The largest difference observed for incomes below $50,000 was seen between the $5,000 - 6,999 (8.6%) and the $10,000 - 14,999 (15.5%). A substantial amount of the observed variation may be primarily a reflection of differences in benefits available. There is, however, a slight connection between family income and race/ethnicity with Whites having more, African-Americans less, and with Hispanics usually someplace in between. The median family income for the population of persons with nervous disorders was $16,250. Among Whites it was $18,000, for African-Americans $9,500 and among Hispanics $13,250.

Marital Status. The percentage of persons with neurological disorders for the two largest marital categories were almost identical. These were married with spouse in the household (39.3%) and never married (40%). The percentage of divorced persons with nervous disorders was 6.1%. Among whites, the category "married persons with the spouse in the household" had the largest percentage. Among African-Americans and Hispanics, however, the largest percentage was observed for the "never married" category. The highest percentage of persons in the "never married" category was observed for the race/ethnic group labeled "Other." Generally speaking, the relationship between race/ethnicity and marital status was only

slight, however.

Employment. The overwhelming majority (78.8%) of the population with nervous disorders were not in the labor force and only 19% were employed. Within race/ethnic groups the highest percentage not in the labor force was observed for African-Americans. The highest percentages employed within race/ethnic groups were for "Other" (22.9%) and Hispanics (15.9%).

Geographic region. As with some other forms of disability, the south is in the leadership as far as the percentage of persons with nervous disorders is concerned (23.6%). The midwest is tied for first place with regard to percentage of persons with nervous disorders (23.6%). Typically, the largest percentages within racial/ethnic groups were observed in the south for Whites (35.2%), in the south for African-Americans (58.6%), and in the west for Hispanics (40.2%). Overall, there appears to be a slight relationship between race/ethnicity and geographic region, possibly due to an unevenness associated with the population distribution in the larger society.

Demographic Associations

Association between Race/Ethnicity and Disability

In order to probe more deeply into the connection between disability and minority group membership, further examination was necessary.

Essentially, this consisted of studying the association between race/ethnicity and disability from several vantage points. The first of these involved a determination of the association between the four types of race/ethnicity classifications and the four disability categories under study. At a more fundamental level, a study was also undertaken of the association between race/ ethnicity and nine (9) demographic variables across each of the four disability categories. This was followed by an analysis of the association between race/ethnicity and the nine (9) demographic variables within each (a) type of chronic health condition, (b) type of physical, sensory, and language impairment, (c) type of mental disorder, and d) type of nervous disorder.

For all analyses, the measure of association was the statistic known as Cramer's V which ranges from .00 to 1.0 and is interpreted directly on the basis of its size. A low number means weak association and a high number means strong association.

Race/Ethnicity and four disability groups - Table 1 shows that among the four disability categories the association between race and mental disorders (c=.19) was the strongest. The associations between race and chronic health conditions and physical, sensory and language impairments were low and almost negligible with values of c=.07 for both.

TABLE 1

Values of Cramer's V for association between race/ethnicity and four disability category groups

Disability Category Group	Cramer's V	P
Chronic Health Conditions	**.07**	**<.0001**
Physical Impairments	**.07**	**<.0001**
Mental Disorders	**.19**	**<.0001**
Nervous System Disorders	**.11**	**<.0001**

Race/Ethnicity and Demographic Variables - Table 2 shows some interesting findings. The association between race and family income was consistently observed to be among the strongest across all four types of disability classifications. With the exception of mental disorders, there was virtually no evidence of a systematic relationship between race and sex nor between race/ethnicity and employment. When each type was examined separately, it was seen that the strongest associations with race/ethnicity in the chronic conditions group was observed for family income, education and marital status. For the group with impairments, the strongest associations with race were seen for family income, geographic region and marital status.

TABLE 2

Values of Cramer's V for measuring association between race/ethnicity and selected demographic variables among four types of populations with disabilities in the United States

	Chronic Health	Impair-ments	Mental Disorders	Nervous Disorders
Race by				
Sex	.04	.02	.12	.07
Age	.08	.08	.30	.15
Education	.12	.10	.20	.11
Family Income	.14	.13	.21	.15
Gen. L.O.A.	.06	.09	.16	.06
Work L.O.A.	.06	.09	.18	.08
Marital Status	.12	.11	.14	.16
Employment	.05	.08	.11	.11
Geographic Region	.13	.13	.16	.14

Race/Ethnicity, Demographic Variables, and Chronic Health Conditions - Table 3 shows that in this analysis associations between race/ethnicity and other demographic variables were strongest for age, education, family income, marital status, and geographic region. The relationships were also more pronounced for some chronic conditions than they were for others. For example, the association between race and age was strongest in the heart disease (c=.12), cerebrovascular (c=.16), and

TABLE 3

Values of Cramer's V for measuring the association between race/ethnicity and selected demographic variables for seven types of chronic debilitating health conditions

	Heart Disease	Cerebro-Vascular	Respiratory Disorder	Intervertebral Disc Dis.	Diabetes	Hypertension	Arthritis
Race by							
Sex	.08	.04	.04	.06	.06	.06	.04
Age	.12	.14	.12	*	.11	.09	*
Education	.12	.16	.10	.10	.14	.15	.16
Family Income	.16	.17	.17	.14	.12	.16	.15
Gen.L.O.A.	.07	.12	.05	.08	.08	.08	.07
Work L.O.A.	.06	.15	.06	.09	.06	.09	.08
Marital Status	.13	.12	.13	.13	.13	.14	.13
Employment	.08	.09	.07	.07	.04	.06	.07
Geo. Region	.09	.16	.12	.10	.17	.16	.13

* Row or column sum to zero - no statistic computed.

respiratory disorders (c=.12) groups. The association between race and education was strongest for the cerebrovascular (c=.16), diabetes (c=.14), hypertension (c=.15), and arthritis (c=.16). The association between race and family income was strongest in the cerebrovascular (c=.17), respiratory disorder (c=.17) and hypertension (c=.16) groups. For marital status the association was virtually the same across all seven types of conditions, ranging from .12 for the cardiovascular group, to .14 for the hypertension group. The

association of race with geographic region was highest within the cerebrovascular (c=.16), diabetes (c= 17), and hypertension (c=.16) groups.

Race/Ethnicity, Demographic Variables and Impairments - Table 4 shows that associations between race/ethnicity, and other demographic variables were strongest for age, education, family income, employment and geographic region. The extent of these associations varied across impairments from almost zero for some to relatively high values for others. For example, the highest associations between race and age were seen for paralysis (c=.23)

TABLE 4

Values of Cramer's V for measuring the association between race/ethnicity and selected demographic variables for six types of impairments

	Hearing Impair.	Ortho Impair.	Visually Impair.	Para-lysis	Loss of Extre-mities	Speech Impaired
Race by						
Sex	.06	.02	.02	.05	.12	.08
Age	.10	.06	.11	.23	.20	.16
Education	.10	.12	.12	.10	.20	.12
Family Income	.13	.13	.13	.18	.21	.18
Gen. L.O.A.	.08	.08	.10	.10	.16	.08
Work L.O.A.	.07	.09	.10	.1	.16	.14
Marital Status	.12	.11	.13	.17	.14	16
Employment	.10	.09	.08	.12	.21	.14
Geo Region	.13	.12	.14	.13	.18	.20

and loss of extremities (c=.20). The association between race and education was highest for the loss of extremities group (c=.20). For family income, the association with race was highest in the paralysis (c=.18), loss of extremities (c=.21) and speech impaired (c=.18) groups. For employment, the highest association with race was seen for the loss of extremities group (c=.21). Finally, the association between race and geographic region was highest within the loss of extremities (c=.18) and speech impaired (c=.20) groups.

Race/Ethnicity Demographic Variables and Mental Disorders - Table 5 shows that the association between race/ethnicity and other demographic variables were strongest for age, education, family income, and employment. These relationships were all seen either for the schizophrenic or "other psychoses" groups. No relationship statistics could be computed for the affective psychosis group due to distortions in the data configuration. Within the schizophrenic group; the highest associations between race and other demographic variables were seen for family income (c=.42) and employment (c=.32). In the "other psychoses" group, the highest associations were seen for age (c=.40), education (c=.34), and family income (c=.35).

Race/Ethnicity Demographic Variables and Nervous Disorders - Table 6 indicates that associations between race/ethnicity and other demographic variables were strongest for age, education, family income, marital status,

TABLE 5

Values of Cramer's V for measuring the association between race/ethnicity and selected demographic variables for three categories of mental disorders

	Schizophrenic	Affective Psychosis	Other Psychosis
Race by			
Sex	.14	*	.23
Age	*	*	.40
Education	*	*	.34
Family Income	.42	*	.35
Gen. L.O.A.	.25	*	.14
Work L.O.A.	.24	*	.24
Marital Status	*	*	*
Employment	.32	*	*
Geo. Region	.22	*	.26

* Row or column sum zero - no statistic computed.

and employment. Relationships were also more pronounced within some disorder groups than they were in others. For example, the association between race and age was strongest in the cerebral palsy (c=.27) and epilepsy (c=.21) groups. The association between race and education was strongest for mental retardation (c=.31) and multiple sclerosis (c=.36). The association between race and family income was relatively high for the

multiple sclerosis group (c=.40) and to a somewhat lesser extent for the mental retardation group (c=.22). Associations between race and marital status were highest in the multiple sclerosis (c=.37) and "other disorders" (c=.50) groups. The association between race and employment was highest in the epilepsy group (c=.24).

TABLE 6

Values of Cramer's V for measuring association between race/ethnicity and selected demographic variables for six types of nervous disorders

	Mental Retardation	Cerebral Palsy	Parkinson's Disease	Epilepsy	Multiple Sclerosis	Other Disorders
Race by						
Sex	.08	.08	*	.11	.18	.22
Age	.15	.27	*	.21	*	*
Education	.31	.11	*	.16	.36	*
Family Income	.22	.20	*	.19	.40	.20
Gen. L.O.A.	.09	.12	*	.10	.15	.16
Work L.O.A.	.14	.12	*	.15	.14	.24
Marital Status	.16	.19	*	.17	.37	.50
Employment	.14	.14	*	.24	*	.17
Geo. Region	.18	.13	*	.18	.21	.16

* Row or column sum to zero - no statistic computed.

DISCUSSION

As noted above there is a significant disparity within the area of chronic conditions relative to gender. It is unclear whether the large chronic conditions sex disparity occurs because of the types of conditions selected for study or because of some other factors related to health care of females, especially African-American females. The comparison of the sexes showed clearly that whether we see marked differences between males and females depends on how disability is defined. For some types of classification males may dominate while females may dominate for others. Generally, there is not much evidence for a systematic connection between physical disability and gender. It all depends on the specific type of disability being considered. It was observed, however, that females are slightly more prone to develop a mental disorder than males, but the specific type of disorder may vary according to gender classification or race/ethnicity, as far as prevalence is concerned. For whatever reasons, it was also observed that African-American males seem especially prone to develop disorders of the central nervous system.

The overrepresentation of African-Americans and Hispanics with chronic health conditions in comparison to Whites suggests that Whites are generally more healthy than minority groups. There was also substantial

evidence that physical, sensory and language impairments tend to increase in number as we proceed to older age groups. The working age population seems to be particularly susceptible to impairments of the type included in our classification. These connections seem to be highly ubiquitous, however, and attempts to unravel all the various relationships between age, socioeconomic status and other concomitant influences, is a formidable challenge.

A good deal of furor has been generated about the overrepresentation of African-Americans in special education classes in the public schools. In this study the data clearly suggest that they are overrepresented for mental retardation and also for a number of other nervous system disorders as well. This could be an important concomitant of the forestated overrepresentation. These findings are consistent with research conducted by Jones (1987), Walker (1986), and Walker (1984). It is apparent that minority persons with impairments are more likely to be seen at the lower educational levels. These findings support research which has been conducted by Bowe (1985) and Walker (1988). There is more of a connection between race/ethnicity and disability than between education and disability.

For the most part what we say about education can also be said about age, in that the various influences are not so easily untangled. There does

appear to be some slight but systematic connection between mental disorders and race/ethnicity and between education and race/ethnicity in the population with mental disorders.

Among persons with disabilities, there is a definite cleavage between the haves and the have-nots with those on public assistance at the lower income levels and persons who are employed at the upper level of family income. Moreover, there is a remarkable and consistent tendency for minority persons across disability groups to be at the bottom of the economic ladder and for Whites to be at the top. In all four disability classifications African-American income hovers around $10,000 and is uniformly low. To a somewhat lesser extent, this is also true of Hispanics, where income hovers around $13,300 except for the impairments category, where it increases to $16,500. Among Whites with disability, family income ranges from a low of $16,600 for the mental disorder group up to a high of $27,050 for the impairments group. There is nothing approaching a reasonable approximation between White family income and minority family income for any of the four disability classifications. These comparisons are shown below in Table 7.

TABLE 7

Median Family Income by Ethnic Group

	Median Family Income			
	Whites	Hispanics	African-American	Overall
Chronic Conditions	19,000	13,000	10,000	17,500
Impairments	22,050	16,500	10,800	20,000
Mental Disorders	16,600	13,500	10,000	14,121
Nervous Disorders	18,000	13,250	9,500	16,250

In sum, there are two very striking pieces of evidence about the relationship between race/ethnicity and family income among persons with disabilities. These are (1) that the four race/ethnic groups are in the same relative income position no matter what the category, and (2) Whites are consistently at the top and African-Americans consistently at the bottom.

The findings of this study indicate that most people with a chronic health condition were either married at present or had been at some previous time. The marriage rate for African-Americans was lower than the rate for

Whites. Generally, persons with physical disabilities tended to be married whereas African-Americans tended to be in the other marital status categories. For example, African-Americans were more likely to be separated from a spouse than other individuals in the sample. It was not possible in the current study to determine whether the marital status relationships were culturally influenced or the result of disability. The proportion of persons who had never been married was especially high in the population with mental disorders. This is probably due to the large number of schizophrenics (who encounter this disability earlier in life).

Among persons with a disorder of the nervous system, marriage is a casualty before rather than after the fact with proportionately more persons in this category "never married."

Employment In the matter of employment, it seems that when people were identified as chronically ill, a substantial number of them were beyond the usual age for retirement. This is related to the connection between age and health status. Were it not for the fact of advanced age, however, there would probably be more employed people working in spite of their chronic health condition. Hispanics appear to be hardest hit by unemployment.

Generally, physical, sensory and language impairments were not as devastating in their effect on employment as chronic health conditions were.

By and large, a substantial number of persons with disabilities were either employed or were seeking employment. As far as mental illness was concerned, it was especially devastating in its impact on employment, even more so than for other types of disabilities.

To some extent, the large percentage of persons with disabilities in the south is an artifact of the way the country is divided geographically by the National Center for Health Statistics. The densely populated east coast is included in the south along with many large cities in the old south extending all the way to Texas.

With regard to physical, sensory and language impairments, the south seems particularly susceptible to these occurrences, either because of demographics or because of peculiarities associated with the region such as life styles and the kinds of employment available. Among the four disability categories, the only one where the south is not in the lead is mental disorders. This suggests that the midwest and northeast are either more stressful or that they have a larger percentage of people prone to develop a mental disorder. It should be noted that the midwest was tied with the south with regard to persons with nervous disorders.

POLICY IMPLICATIONS

Several major findings were identified in the current study with regard to the following reference variables: income, education, geographic location, employment, disability and health status.

Income In all four disability classifications, African-American income hovered around $10,000 and was uniformly low. To a somewhat lesser extent, this is also true of Hispanics whose income hovered around $13,300 except for the impairment category where it increased to $16,500. Among Whites with disabilities, family income ranges from a low of $16,600 for the group with mental disorders to a high of $22,050 for the group with impairments.

Education Across all four disability categories, the highest proportion of subjects were found in the 12 years of education category for all disability groups:

- Chronic health conditions 32.7%
- Impairments 33.4%
- Mental disorders 14.4%
- Nervous disorders 22.9%

A high proportion of subjects were also found in the 1-8 years of schooling category:

- Chronic health conditions 25.3%
- Impairments 19.4%
- Mental disorders 14.4%
- Nervous disorders 35.0%

It should also be noted that African-Americans and Hispanics consistently had lower levels of education than their White counterparts.

Geographic Location A high proportion of subjects from each of the four disability categories resided in the Southern region. For example, chronic

conditions 37.2%, impairments 34%, mental disorders 30.8%. The midwestern region had the highest proportion of persons with mental disorders (32.4%). The south and the midwest were tied for first place with regard to the percentage of persons with nervous disorders (23.6%). At least 50% of the African-American subjects with disabilities resided in the southern region. As might be expected, the west, for example, represented a very high concentration of Hispanics with disabilities: 40.6% of Hispanics with physical, language, and sensory impairments resided in the west. In addition, 40.2% of Hispanics with nervous disorders resided in this region.

Employment

While a high proportion of subjects in each of the four disability categories were unemployed, generally, physical, sensory, and language impairments were not as devastating in their effect on employment as were chronic health conditions, mental disorders, and nervous disorders. Mental and neurological disorders were especially devastating for African-Americans and Hispanics.

Disability and Health Status

With regard to physical, sensory, and language impairments among persons age 65 and older, there was a much higher proportion who were White than were African-Americans or Hispanics, or "Other." This is probably a direct result of better health care and greater longevity among Whites in comparison to the other race/ethnic subgroups. The findings show a clear need for mental health support systems for m les in minority communities.

Trends for the 21st Century

Jacobs (1987) makes the point that the buying power of African-Americans and many other minority persons diminished in real terms during the 1980s. The high costs of care, medication and/or aids (such as

wheelchairs and hearing aids) to assist the individual with a disability to gain any degree of independence frequently cannot be afforded. This creates the necessity for a greater degree of public assistance to the family of the minority person with a disability. The absence of supportive aids further limits the earning power of the family of a minority individual with a disability (Nicholls, 1986).

The African-American, Hispanic, and Native-American who becomes disabled frequently finds that his/her job is not accessible, especially if it is in an old section of the community where the barriers to access are the most numerous. If this individual is the head of a household, then the entire economic structure of the family is destroyed. Thus, this individual minority adult is frequently unable to become totally integrated into community life because his/her range of mobility in the community is restricted. The community labels him/her as inferior and does not provide for his/her free access to education or ways for him/her to develop socially and culturally. Additionally, this situation of isolation has serious ramifications for self-concept and educational achievement.

Research conducted by the Hudson Institute (1987) revealed several startling trends in regard to the American workforce as we approach the year 2000. In addition to the fact that there will be new changes or developments

in technology, international competition, demographic, and other factors will change the nation's economic and social landscape. The following trends were cited by the Hudson Institute Report (1987):

1. The population and the workforce will grow more slowly.

2. The average age of the workforce and the population will rise and the pool of young workers entering the labor market will shrink.

3. More women will enter the workforce.

4. Immigrants will represent the largest share of the increase in the population and the workforce since the First World War (a projected 600,000 legal and illegal immigrants).

5. Minority persons will be a larger share of new entrants into the laborforce. It is projected that by the year 2000 this trend will escalate.

In spite of their potential for increased employment, the current study provides additional evidence that African Americans and Hispanics with disabilities are disproportionately represented at the lower end of the economic spectrum and among unemployed individuals with disabilities. The Hudson Institute Report (1987) suggests that future jobs will demand much higher skill levels than the jobs of today. Very few jobs will be created for those who cannot read, follow instructions, and use mathematics. These trends will lead to both higher and lower unemployment: more joblessness among the least skilled and less among the most educationally and

economically advantaged.

Current trends and challenges of the immediate future make it necessary to improve the educational preparation of all present and future workers. Furthermore, there is need to integrate persons with disabilities, economically disadvantaged, and ethnic minority workers fully into the economy. Given the pressing societal and economic demands including the shrinking number of young people, the rapid pace of industrial change, and the ever-rising skill requirements of the emerging economy, it is essential that America respond to the task of fully utilizing the potential of the economically disadvantaged and minority persons with disabilities now and in the year 2000.

Based on the findings of the current study, it is imperative that policy makers implement strategies which improve the health and employment status of African Americans, Hispanics, and other minority persons with disabilities.

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