THE RELATIONSHIP BETWEEN CONSUMER RACE AND VOCATIONAL REHABILITATION SERVICES AND OUTCOMES

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By

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ABSTRACT

The purpose of this study was to explore the relationship between consumer race and vocational rehabilitation services and outcomes through the state/federal vocational rehabilitation (VR) system. Consumers who participated in the study were those who sought VR services in Ohio during the 1996 federal fiscal year. The sampling frame in the investigation consisted of 62,178 VR consumers. Results from the t-test and point biserial correlation indicated that African Americans (n = 787) received more VR services than European Americans (n = 3,747), and that there is a small significant correlation between race and the number of services received. The chi-square test indicated that the three most common services for African Americans (n = 878) were adjustment training, transportation, and maintenance. In contrast, the three most common services European Americans (n = 4,216) received were restoration, college, and diagnosis. Relative to the VR eligibility question, there were no differences in acceptance rates for African Americans and European Americans. However, if found ineligible for VR services, African Americans were more likely to be closed for the following reasons: (a) cannot locate and (b) failure to cooperate. European Americans were likely to be closed for the following reasons if found ineligible for VR services: (a) handicap too severe, (b) no vocational handicap, or (c) other. The t-test revealed that European Americans tend to
earn more at successful closure (Status 26) than African Americans. Race and primary support at referral were found to be statistically significant with more African Americans reporting public assistance and European Americans reporting earnings and family and friends as their primary sources for income at referral. Race and reason for closure (after the Individual Written Rehabilitation Plan [IWRP] was written) were found statistically significant. ‘Failure to cooperate’ (African Americans) and ‘other’ (European Americans) were the only two cells found statistically significant when closed after the IWRP.

Logistic regression was used to ascertain whether race, education at referral, work status at referral, and source of support at referral influenced VR acceptance. The stepwise method of entry was used to determine the best predictor variables. Primary source of support at referral was the only variable selected and found statistically significant in the regression model. As earnings increased there was evidence that acceptance into VR decreased (holding all other variables constant).

This study should be replicated in the future to establish a potential pattern of services important for VR acceptance. Finally, more attention should be focused on qualitative research as validation of quantitative results using the 911 data. Perhaps, developing questionnaires and interview schedules will assist to this end.
This dissertation is dedicated to my wife, Beverly, and my
Daughter, Aliya.
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CHAPTER 1

INTRODUCTION

In the archives of American history, the values and beliefs that we have come to support and admire have been shaped by the dominant culture, which often includes derogatory, misleading and incomplete information about African Americans and other minorities. This manifestation has affected the (a) service delivery within the vocational rehabilitation system (VR), (b) the development of the counseling and educational professions, and (c) the way in which service providers relate and deliver services to their consumers (Nineteenth Institute on Rehabilitation Issues, 1992). The inference here is that our workplaces are viewed as a microcosm of the larger society, and the attitudes that are preserved by the larger society influence service delivery outcomes in the human service profession (Ayers, 1969; Dodd, Nelson, Ostward, & Fischer, 1991; Feist-Price & Ford-Harris, 1994; Rubin, Pusch, Fogarty, & McGinn, 1995; Sue, 1994; Thomas & Sillen, 1972; Wise, 1988). Hacker (1995) may have best described the influence of history and the misinformation about people of color:

In the eyes of white Americans, being black encapsulates your identity. No other racial or national origin is seen as having so pervasive a personality or character.
Even if you write a book on Euclidean algorithms or Renaissance sculpture, you will still be described as a "black author." Although you are a native American with a longer lineage than most, you will never be afforded full membership in the nation or society. (p. 36-37)

An inference made from Hacker's (1995) quote illustrates that if one is African American, race defines how African Americans (people of color) are treated and evaluated when negotiating for housing, bank loans, or a job. Possible reactions to people of color in our society, and specifically to African Americans, are likely to project themselves in innumerable ways, including: (a) exclusion from social and vocational events, (b) job discrimination practices in hiring and promotion, and (c) isolation from the dominate society if one reflects idiosyncrasies associated with the African American masses (e.g., Black slang, rap music, etc.). Hacker (1995) also reported that for as long as records have been kept in the United States, European Americans have made it twice as hard for African Americans to locate and keep jobs. If the above assertions are true, this is an unfortunate reaction to a group of Americans who are making up an increasing number of our nation's new entrants into the workforce and who are likely to be more severely disabled than European Americans (Marshall, 1987).

Individuals in the research and educational communities may ask about other factors that contribute to the quality of life (e.g., socioeconomic and educational) of the nation's citizenry. Race appears to be a significant variable in determining the quality of life (e.g., vocations, bank loans) for people of color (Hacker, 1995). According to accepted norms of the larger society, if the shade of one's skin is light, the assimilation
opportunities will be enhanced in American society. The ‘blending-in’ process of other ethnic groups when compared to people of color in the U.S. is quite interesting and intriguing. By some accounts, assimilation appeared to be associated with the shade of one’s skin with persons with lighter skin color being more easily assimilated. (Bennett, 1995).

The generations of White ethnic groups who visually did not appear much different from the European Americans in the U.S., could assimilate into to the U.S. by giving up their original names, language, and traditions. However, this was not possible for people of color who were darker (Bennett, 1995). Consequently, “white ethnic groups were able to attain full inclusion into the mainstream society once they were culturally identical to Anglo-Saxon Protestants” (Banks, 1991, p. 254). Ethnic European Americans did not have an assimilation problem if they were culturally identical to the prevailing norms of the majority culture; not so with African Americans and people of color (Bennett, 1995).

The American macrocosm (general attitudes and behaviors of the U.S.) suggestion infers that people of color are encumbered not only with everyday stressors that various Americans experience, but the added stress of being a person of color. Conceivably, if the macrocosm assertions have validity, certain fundamental amenities and basic rights to people of color may be jeopardized. Realizing that we live in an imperfect society, the rights and rudimentary amenities of many ethnic groups may be jeopardized because of certain physical characteristics. It is sensible to expect that macrocosmic ways of functioning filters down to agencies (e.g., vocational rehabilitation) and into the fabric of the American way of life, intentionally or unintentionally.
Microcosm: Vocational Rehabilitation

Vocational outcomes of persons with physical, mental, and emotional disability were relatively successful before 1965. The enactment of the Vocational Rehabilitation Amendments of 1965 extended services to the culturally disadvantaged and racial minorities (Ayers, 1967). The VR system moved cautiously in addressing the needs these new entrants. Moreover, when diagnosing reasons for this lack of enthusiasm by the state and federal systems for this new group of consumers, there seem to be three salient factors: (a) the lack of knowledge (b) the lack of diagnostic criteria, and (c) the lack of experience with this disability group (Ayers, 1967). Some researchers (e.g., Ayers, 1969; Feist-Price & Ford-Harris, 1994; Rubin et al., 1995; Sue, 1994; Thomas & Sillen, 1972) believe that VR outcomes reflect similar microcosm perceptions of society. The 1992 Rehabilitation Amendments recommended increasing VR service delivery to ethnic minorities, among other groups, an indication that service delivery may not be much different today as observed by Ayers in 1967.

Presently, “a review of the literature reveals a less than admirable history of state and federal rehabilitation services to African Americans and other minorities with disabilities” (Dixon & Wright, 1996, p. 140). Wright (1988) reported that VR service delivery to ethnic minorities with disabilities suggested the following: (a) African Americans were underrepresented in the VR system, (b) were likely to fare less, compared to European Americans in VR outcomes, (c) were less likely to access VR service delivery compared to European Americans and (d) were less likely to receive equitable VR service delivery compared to European Americans.
As inferred by U.S. historical accounts, being African American often means being devalued by the larger society. The resultant discrimination often leads to inferior education, lower levels of employment, and fewer resources when compared to European Americans (Atkins & Wright, 1980; Hacker, 1995).

African Americans suffer from discriminatory practices which are perhaps the more unmerciful and harmful obstacles than the other disadvantages they may encounter. European Americans who are disabled have a greater opportunity for mobility and assimilation into society. However, the barriers are much greater for African Americans to assimilate, largely because everyone can see his/her race or ethnic identity (Ayers, 1969). This assertion of assimilation based on hue/race identity is supported by several authors (Banks, 1991; Bennett, 1995; Zweighenhaf & Domhoff, 1991). Given the treatment of racial minorities in the United States, it is reasonable to expect that rehabilitation counselors and other human service professionals may possess negative perceptions of ethnic minorities in the U.S. “Societal attitudes not only dictate the type of treatment provided the handicapped, but also influence the development of programs and services to meet their diverse needs” (Ayers, 1969, p. 53). Additionally, Wise (1988) stated that “the vocational rehabilitation agency is a microcosm of our society in its attitude towards individuals with disabilities, blacks and females” (p. 72). Expanding on the microcosm assertion, Sue (1994) reported that the counseling profession needs a sociopolitical reality. He asserted the following connection between racism, the counseling profession, and society:
I am often impressed by the fact that the actual practice of counseling can result in cultural oppression; that what happens in the counselor's office may represent a microcosm of race relations in the larger society; that the so-called psychological problems of minority groups may reside not within, but outside of our clients; and that no matter how well intentioned the helping profession, he/she is not immune from inheriting the racial biases of his/her forebears. (p. 22)

Sue's fears were translated into action in vocational rehabilitation by the 1992 Rehabilitation Amendments, which encouraged increasing services and participation within the VR system to ethnic minorities:

The accessibility and equity of rehabilitation services offered to African Americans have been identified as priorities in Section 21 of the 1993 amendments to the Rehabilitation Act of 1973. The inclusion of emphases for ethnic minorities in federal rehabilitation legislation is warranted given the disproportionate number of minorities with disabilities in relation to their overall representation in the general population. (Alston & Bell, 1996, p. 16)

Ross and Biggi (1986) and Atkins & Wright (1980) indicated that the present vocational rehabilitation system does not respond adequately to the needs of minorities with disabilities. Alston and Mngadi (1992) submitted that educational attainment, skills, work experience, and rehabilitation outcomes are influenced by the race of a client. Race and ethnicity influence attitudes towards the methods used in rehabilitation (McIntosh, 1986) along with the outcomes of rehabilitation efforts (Brown, Joe, & Thompson, 1985).
Demographics of minorities. The United States Census (1989) data indicated that African Americans and Hispanics with disabilities are affected more negatively in their ability to work relative to European Americans. Walker, Adbury, Maholmes, and Rackely (1992) reported that members of ethnic and racial minorities are more likely to experience a disability. Although African Americans comprise 12% of the U.S. population, they represent 15% of the incidence of disability (Walker, 1988). Additionally, 24% of all severely disabled working age adults between the ages of 16-64 are African Americans (Bowe, 1992).

The percentage of minorities in the workforce will increase at a rate of 13.6% in 1980 to 15.5% in 2000 (Leong, 1991). Minorities are making up an increasing proportion of the population and workforce (Leung, 1993), and because minorities are more likely to be disabled, the proportion of people with disabilities is likely to increase (Campbell, 1990), and the proportion of minorities with disabilities is also likely to increase, given the above projections. Consequently, additional research is needed to insure equitable service delivery to this growing population of consumers with disabilities.

Purpose of the Study

The purpose of the study is to investigate the relationship between consumer race and vocational rehabilitation services and outcomes in a large Midwestern state. The following sections will address the significance of the problem, the problem statement, the variables that are considered, and research questions. The section ends with basic assumptions, limitations, and definition of terms.
Significance of the Problem

It is a generally held belief that the present VR system does not respond adequately to the needs of minorities with disabilities (e.g., Atkins, 1988; Atkins & Wright, 1980; Feist-Price & Harley, 1996; Ross & Biggi, 1986). As a consequence of factors such as unemployment, underemployment, poverty, type of employment (manual labor) and poor physical health, minority groups are predisposed to a higher risk and severity of disability (Brown, 1993). Atkinson, Morten, and Sue (1989) reported that African Americans suffer more from underemployment, undereducation, miseducation, and unemployment than any other group. There is also evidence that African Americans are underserved and underrepresented in many service areas of VR (Wright & Leung, 1993). Additionally, African Americans and other racial minorities will become a major proportion of persons with severe disabilities (Marshall, 1987) in the labor force. African Americans will make up a substantial portion of the disabled citizenry in the U.S., if present demographic trends persist (Feist-Price and Ford-Harris, 1994).

Although the roles and functions of rehabilitation counselors will vary, depending on the mandates of the agency, common features can be observed throughout the process. Mobilizing both consumer and external agencies to meet the needs of the consumer is the major responsibility of rehabilitation agencies. Professional ethics are important to ensure equal participation of all potential consumers to VR.

Adhering to the professional rehabilitation code of ethics is important because it is the right thing to do for consumers who are disabled. Because African Americans (minorities) are more likely to be disabled than European Americans (Walker et al., 1992;
Marshall, 1987), the adherence to the professional codes of ethics is important given the current demographic projections. The qualitative and quantitative literature dealing with the differences (e.g., type, patterns and number) in services regarding African Americans and European Americans are apparent (e.g., Atkins & Wright, 1980; Ridley, 1984; Terrell & Terrell, 1981; Wheaton, Wilson, & Brown, 1996). Currently, researchers are addressing what the differences mean. For example: Are African American and European American consumers receiving services agreed upon by both the counselor and consumer, or, are the differences in services received based on some type of stereotype among the two groups commonly held by present VR counselors?

Because of some gray areas in the VR decision making process (Dr. Robert L. McConnell, personal communication, July 19, 1996), our ethical responsibilities to all consumers is important to increase fairness and equal access to VR services. Perhaps, attitude and behavioral changes will need to occur within both the VR counselor and the consumer. However, greater adjustment must come from within the VR system, because it is the rehabilitation professional who has the ethical responsibility to serve all consumers to gain the best possible outcome (Wong-Hernandez, 1993). As stated by the National Code of Professional Ethics for Rehabilitation Counselors (1995), it is unethical to exclude any group from services they deserve and need, regardless of race, ethnic background, or national origin.

**Multicultural Issues in Vocational Rehabilitation.** Some have noted that minorities and culturally diverse individuals have been underserved and underutilized in the public VR system in the U.S. (Fristo & Fobbs, 1994). Often, cultural differences are viewed as
personality flaws instead of residual effects of history and racism in the U.S. For example, Omatsu (1992) elaborated on stereotypical customs rooted in history that continue to negatively influence employer and labor union policies. Because some minorities may speak a different vernacular than the job place norm, employers may view certain speech patterns as a deficit. Such individuals may not be hired for the job because of this widely held perception. If the assertion by Omatsu is true, employment outcomes for African Americans with disabilities will continue to lag behind those of European Americans in the United States. Wright and Leung (1993) suggested that the attitudes and behaviors of the work force compound negative perceptions of minorities with disabilities. Feist-Price and Ford-Harris (1994) suggested that African Americans will make up a substantial portion of the disabled citizenry in the United States in the near future. “With an insufficient number of minority counselors in the human service field, it can be hypothesized that many White counselors and administrators are making service delivery decisions that are disadvantaging ethnic minorities” (Baker & Taylor, 1995, p. 46). Consequently, more minorities will be in the VR system and served by mostly European American counselors. It appears to be rational that negative and positive perceptions of consumers may influence service outcomes to some extent, which may be bifurcated along racial lines (African Americans and European Americans).

Given the prevalence of conscious or unconscious negative perceptions toward African Americans, it is reasonable to question whether the negative perceptions of counselors towards African Americans impact delivery of services. Atkins (1988), Feist-Price and Harley, (1996), and Thomas and Sillen (1972) reported that negative counselor
perceptions have an impact on the delivery of VR services received by African Americans. Hostility and resentment toward African Americans can also affect counseling relationships, to the extent that ethnocentric beliefs in counseling may be a microcosm of societal beliefs (Ayers, 1969; Feist-Price & Ford-Harris, 1994; Rubin et al., 1995; Sue, 1994; Thomas & Sillen, 1972). The investigation of services and closure statuses to African Americans and European Americans in a large Midwestern state is significant because possible outcomes can:

1. Heighten the degree of awareness and understanding of service delivery to African Americans and European Americans.

2. Enhance the understanding and types of services received by African Americans and European Americans.

3. Serve as a baseline for multicultural training.

4. Provide guideline areas for training to college and universities about multicultural issues in the field of rehabilitation counseling. Additionally, findings can assist in curriculum development in areas where discrepancies exist in service delivery for African Americans.

5. Provide guidelines for the Rehabilitation Services Administration and state agencies to review policies and to identify counselor-training needs.

6. Provide future research guidelines for comparative studies among African Americans, European Americans, and other consumers seeking assistance with VR agencies.
7. Assist the rehabilitation community in providing additional strategies to address African American outreach concerns.

Need of the Study

This study is needed to understand the VR experiences of African and European Americans with disabilities. Vocational rehabilitation service delivery is complex. For example, cultural mistrust is a concern with African Americans as they enter the VR system (Atkins, 1988; Terrell & Terrell, 1981). Cultural views on diversity may not be totally accepted within the VR system as indicated by past studies relative to the microcosm assertion (Ayers, 1969; Dodd et al, 1991; Feist-Price & Ford-Harris, 1994; Rubin et al., 1995; Sue, 1994; Thomas & Sillen, 1972; Wise, 1988). Consequently, counselors may prejudge consumers based on speech and mannerisms, which may or may not be reflected in VR service delivery to minorities and culturally different consumers. The encounter of possible cultural expectations between the consumer and the VR system is consistent, in that the outcomes of African Americans conform to the self-fulfilling prophecy of the majority group. If found ineligible for services, many African Americans may not be surprised at the final outcome (found ineligible for VR services). This cycle could undermine the relationship between the VR professional and the consumer. Sue and Sue (1990) reported that African Americans had a 50% termination rate compared to 30% for European Americans after one visit with a counselor. The ramifications of such discrimination, conscious or unconscious, will continue to be detrimental to the rehabilitation process for African Americans with disabilities. Lastly, researchers have noted (Griffith, 1977; Ridley, 1984; Williams & Kirkland, 1971) that African American
consumers tend to disclose less with European American counselors as opposed to African American counselors. Because disclosure is viewed as a major part of rapport building and trust in the counseling session, the differences in termination and disclosure rates among African Americans and European Americans are reasons for concern.

This study addressed whether certain explanatory and criterion variables among African Americans and European Americans will yield similar results in services to both groups. Part of this dissertation replicates the Wheaton et al. (1996) study regarding patterns and types of services among African Americans and European Americans. Moreover, this dissertation expands on the acceptance rate research by Dziekan and Okocha (1993) and Wheaton (1995), looking at the acceptance patterns of African Americans and European Americans. It is important to mention that this dissertation used different data (from a different year) in answering the proposed research questions.

Although several outcome studies investigated patterns of services among African Americans and European Americans in the VR system, this study investigates patterns to observe if African Americans and European Americans were more likely to receive certain services. Additionally, from selected explanatory variables, logistical regression will determine whether acceptance rates can be predicted. Ross and Biggi (1986) indicated two possible reasons for case closure concerning nonwhites: (a) linguistic barriers and (b) cultural isolation. These factors can hinder the understanding of the delivery process and consequently, cause an under-utilization of rehabilitation services by African Americans. This research attempts to add information to assist the VR system in responding to the needs of African Americans with disabilities.
Explanatory Variables

**Racial/ethnic status.** A categorical variable with two levels (African American or European American). Race/ethnicity is defined as the race reported by consumers on their application for VR services.

**Acceptance for VR services.** A categorical variable with two levels (Statuses 08 and 10). Status 08 identifies consumers who are ineligible or otherwise not accepted for VR services. Status 10 identifies consumers who were accepted for VR services. In Status 10, an assessment of the consumer’s needs is completed and the Individualized Written Rehabilitation Plan (IWRP) is approved.

**Work status at referral.** A multichotomous variable with 9 levels: (a) competitive labor market, (b) sheltered workshop, (c) self-employed, (d) state agency managed business enterprise, (e) homemaker, (f) unpaid family worker, (g) not working-student, (h) not working-Other and (i) not working-trainee or worker in non-competitive employment. Work status best defines the work activity performed by the consumer one week prior to application for VR services.

**Education at referral.** A multichotomous variable with three levels: (a) less than high school degree, (b) high school graduate, (c) more than high school degree. Education refers to the highest level of education completed at referral.

The federal labels for race (i.e., White and Black) were modified to more closely reflect current usage, which is based upon geographical area of origin. Consequently, "Blacks" are defined as African Americans and "Whites" are defined as European

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Americans. Asian Americans and Native Americans were not used in this study because of inadequate sample sizes. No category exists for multiracial designations.

Criterion Variables

**Total number of services.** A metric variable with continuous scaling (ranging from 1-13 services). Once a person received a service, the service was added to the total. The total number of services is defined by summing the number of services a person received, regardless of who delivered the service or when it was delivered. Thus, a person could receive from 1-13 possible services.

**Type of services.** A categorical variable with two levels (yes or no). The type of services received (a categorical multichotomous variable with 13 levels).

Types of services were defined by the RSA as (1995):

1. Diagnostic (assessment): Services required to determine eligibility or to determine the need for other services.

2. Restoration (physical and mental): Services needed “to correct or substantially modify a physical or mental condition” (RSA, 1995, p. 33), such as surgery, therapy, or treatment.

3. College/University Training: Academic schooling beyond high school.

4. Business and Vocational Training: Non-college post-secondary schooling, where a baccalaureate degree is not offered.

5. Adjustment Training: Training to help a person adjust to a particular work situation such as work hardening, mobility training, literacy training, or lip reading.
6. On-the-job Training: Training with a specific employer where the person earns wages while in training and where it is expected that, if the training is successful, the person will remain on the job or go to a similar job.

7. Miscellaneous Training: Training not identified above, such as secondary school level academic training or training at specialized schools for persons who are deaf blind or both.

8. Counseling: Although not formally identified by the RSA, counseling was coded as a service when it was a predominate service.

9. Job Referral (Job-Finding Services): The provision of information regarding a job that allows a person to contact employers on his or her own.

10. Job Placement: Occurs when a person is referred to an employer and hired. Job placement differs from a job referral in that for job placement to occur, the person must be hired and not merely in contact with an employer.

11. Transportation: Provided to allow the client to meet appointments for assessment, training, or other services.

12. Maintenance: Services provided to finance additional costs while receiving rehabilitation services.

13. Other services: Services not included elsewhere. Examples are occupational tools and equipment, initial stocks and licenses, or services to family members.

Eligibility/Accepted for VR services. A categorical variable with two levels (Statuses 08 and 10). Status 08 identifies consumers who are ineligible or otherwise not accepted for VR services. Status 10 identifies consumers who were accepted for VR
services. In Status 10, an assessment of the consumer’s needs is completed and the Individualized Written Rehabilitation Plan (IWRP) is approved.

**Reason for closure (if ineligible for VR services: Status 08).** A multichotomous categorical variable with 12 levels: (a) unable to locate, (b) handicap too severe, (c) refused service, (d) death, (e) client institutionalized, (f) transfer to another agency, (g) failure to cooperate, (h) no disabling condition, (i) no vocational handicap, (j) transportation not feasible, (k) client declined order of selection on waiting list and (l) other. Status 08 is used to identify consumers who are ineligible or otherwise not accepted for VR services.

**Reason for unsuccessful closure (after the IWRP is approved: Status 28).** A multichotomous categorical variable with 12 levels: (a) unable to locate, (b) handicap too severe, (c) refused service, (d) death, (e) client institutionalized, (f) transfer to another agency, (g) failure to cooperate, (h) no disabling condition, (i) no vocational handicap, (j) transportation not feasible, (k) client declined order of selection on waiting list and (l) other. Status 28 is used to identify consumers who are closed for other reasons after the IWRP is initiated and approved.

**Source of support at referral.** A multichotomous variable with 11 levels: (a) current earnings, (b) family and friends, (c) private relief agency, (d) public assistance at least partly with federal funds (i.e., SSI and AFDC), (e) public assistance without federal funds (general assistance only), (f) public institution-tax supported, (g) worker’s compensation, (h) social security disability insurance (SSDI), (i) all other public sources, (j) annuity or other non-disability insurance, (k) all other sources.
Weekly earnings (at successful closure: Status 26). A metric variable with interval scaling. Successful closure (Status 26) is defined as remaining employed for at least 60 days.

Research Questions used in the Study

**Overall Research Question**

Is there a difference in the vocational rehabilitation experiences of African Americans and European Americans with disabilities?

Operationally, the research questions pertaining to VR service delivery between African Americans and European Americans with disabilities were:

**Question 1.** Is there a difference in the number of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?

**Question 2.** Is there a difference in the types of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?

**Question 3.** Is there a difference in the acceptance rates of African Americans and European Americans (Statuses 08 and 10)?

**Question 4.** If found ineligible for VR services (Status 08), is there a difference between African Americans and European Americans in the reason for closure?

**Question 5.** Is there a difference in hourly wages and hours worked between African Americans and European Americans after successfully completing the rehabilitation process (Status 26)?
Question 6. Is there a difference in the source of support among African Americans and European Americans at referral (Statuses 00 and 02)?

Question 7. If found eligible for VR services, is there a difference between African Americans and European Americans in the reason for closure after their Individual Written Rehabilitation Plans (IWRP) were completed but whose cases were closed unsuccessfully (Status 28)?

Question 8. Is there a difference in acceptance rates based on race, education, work status at acceptance, and source of support at referral?

Basic Assumptions

Because the study was an ex post facto design, no conclusion regarding causality can be inferred (Campbell & Stanley, 1963). This study assumed that the reporting instrument used (RSC-001 data sheet) by counselors and representatives of this particular Midwestern State VR agency is reliable and valid. Coding error is assumed to be random error and therefore will not significantly affect data analysis outcomes.

Limitations of the Study

This study contains the following threats to external validity. External validity as reported by Campbell and Stanley (1963), “always turns out to involve extrapolation into a realm not presented in one’s sample” (p. 17):

1. This study is limited to state agency consumers who were listed in a Midwestern state who sought services from the state VR agency (representativeness of sample).

2. This study is limited to African Americans and European Americans. Individuals self-reported their race at application. The results of the study can only be generalized to
the target population in which the sample was drawn and not to other racial/ethnic
groups (external validity).

3. This study is limited to the African American and European American populations in
the Midwestern state in which the sample was drawn randomly. Again, the results of
the study can only be generalized to the target population in which the sample was
drawn, in this case African Americans and European Americans in a large Midwestern
state.

4. This study is limited to the total number and types of services included in the study as
criterion variables (Campbell and Stanley, 1963). Additionally, this study can be
generalized only to explanatory variables and criterion measured by RSA. The RSA
agency under study identified 13 possible services a person could receive.

5. Self reporting is another limitation. It is assumed that consumers and counselors
reported requested information in an honest manner, and used the same definitions as
RSA.

6. Counselors may have entered data incorrectly. Thus, an unknown number of errors
may exist in the data. To overcome this problem of coding, RSA has developed 18
cross-checks. Not withstanding the crosschecks, errors may still exist in the data,
although these errors are assumed to be random and present no systematic bias in the
data.

7. Because disability type, disability severity, and age is not controlled in the present
investigation, results may vary.
Internal Validity

Fraenkel and Wallen (1993) report, “The major threat to the internal validity of a causal-comparative (ex post facto) study is the possibility of a subject-characteristics” (p. 322). For example, the age of consumers may influence certain services received. The researcher will minimize the internal threat by making sure that subjects have no missing data on the characteristics under investigation.

Definition of Terms

For the purpose of this study, the following definitions have been formulated to assist in clarification.

1. **Status 28 (unsuccessful closure).** This status is used to identify consumers who are closed for other reasons after the IWRP is initiated and approved but not completed.

2. **Status 26 (Successful closure/rehabilitated).** This status is defined as remaining employed for at least 60 days after completing the IWRP.

3. **Status 08 (not accepted for VR services).** This status is used to identify consumers who are not accepted for VR services.

4. **Status 10 (accepted for VR services).** This status is used to identify consumers who were accepted for VR services.

5. **African American.** A person having origins in any of the Black racial groups of Africa (RSA, 1995). Self reported and synonymous with Black.

6. **European American.** A person having origins in any of the original people of Europe, North Africa, or the Middle East (RSA, 1995). Self reported and synonymous with White.
7. **Disability.** A long-term chronic condition medically defined as a physiological, anatomical, mental, or emotional impairment that is severe enough to limit an individual’s functioning, or one or more major life events (Wright, 1980).

8. **Minority.** A group that is different racially, politically, etc., from a larger group of which it is a part. Any group or individual who is not considered to be a part of the majority culture relative to race (Word Perfect Corporation, 1994).

9. **Eligibility.** Eligibility to VR occurs when the following conditions are met: (1) A consumer must have a physical or mental disability, (2) the disability must be a barrier to employment, and (3) when provided with VR service(s), there is a good chance of employment.

The following reasons for closure have been taken from RSA (1995).

**Reasons For Closure**

10. **Unable to locate.** The Consumer has moved without leaving a forwarding address or otherwise disappeared.

11. **Handicap too severe.** The consumer’s disability is so severe that there is little chance the individual can be vocationally rehabilitated.

12. **Refused service.** The consumer declines to participate or accept VR services.

13. **Death.**

14. **Client institutionalized.** The consumer has entered an institution and will be unavailable to receive rehabilitation services for an indefinite period of time.

15. **Transfers to another agency.** Services needed by the consumer are more appropriately provided by another agency.
16. **Failure to cooperate.** The consumer’s actions (or non-actions) convinced the counselor that it is not feasible to begin or continue VR services (e.g., repeated failures to keep appointments for assessment, counseling, or other VR services).

17. **No disabling condition.** This code applies to consumers not accepted for VR services. The use of this code means that no physical or mental impairment is present.

18. **No vocational handicap.** A consumer has a mental or physical impairment; however, the impairment does not constitute a substantial barrier to employment.

19. **Transportation not feasible.** The provision of suitable transportation for the acceptance or maintenance of employment was either not feasible or not available.

20. **Client declined order of selection on waiting list - Not used.**

21. **Other.** This code is used to cover all other reasons not encompassed by codes 10-20.

**Summary**

This chapter briefly describes the experiences of disabled African Americans and European Americans in the VR system. This chapter also highlighted the past experiences of African Americans and European Americans concerning service delivery mandates (Rehabilitation Amendments of 1992) to minority populations to increase service utilization in the United States. Notwithstanding the Rehabilitation Amendment of 1992, there appear to be service delivery gaps to targeted minority populations. Demographics suggest that minority populations who are disabled will increase in the workforce if current trends continue. More research is needed comparing and contrasting the number and type of services received, acceptance rates, reason found ineligible, and earnings after successfully completing a VR program.
CHAPTER 2

LITERATURE REVIEW

"One possible factor among the multifactored environment for African American persons with disabilities is racial combination with disability discrimination" (Baker & Taylor, 1995, p. 49). Rehabilitation providers must be sensitive to cultural differences between themselves and the consumers they serve; and some rehabilitation providers still lack cultural sensitivity (Atkins, 1988; Dziekan & Okocha, 1993). The notable disparity between the number of African Americans with disabilities and European Americans with disabilities in the general population will make cultural sensitivity a priority for the rehabilitation profession in the near future. Atkins (1988) suggests, our vocational rehabilitation (VR) providers have not fulfilled their commitment to African Americans with disabilities.

Assessing the counseling and vocational issues of African and European Americans with disabilities requires rehabilitation tools and methods for addressing different cultures. The rehabilitation counselor, in multicultural counseling, uses a subset of skills to eliminate unequal treatment and possible bias within the area of vocational rehabilitation. Reducing likely bias reaction to minority groups provides possible advantages for the consumer and the counselor (Feist-Price & Ford-Harris, 1994). It is
reasonable to expect that multicultural sensitivity will become more obvious with the projected increase in minorities with disabilities, as the following demographics display.

Demographics

Walker, Adbury, Maholmes, and Rackely (1992) reported that members of ethnic and racial minorities are more likely to experience a disability. Specific demographics revealed that African Americans comprise 12% of the U.S. population but 15% of the incidence of disability (Walker, 1988). The United States Census (1989) data indicated that the prevalence of a disability negatively affected African Americans and Hispanics more than European Americans in their ability to work.

The U.S. Bureau of the Census (1992) reported that 8.4% of European Americans had health problems or disabilities that impacted their occupation, but 13.4% of African Americans displayed similar problems (Feist-Price & Ford-Harris, 1994). Furthermore, approximately 15% of working age African Americans have had one or more disabilities (Walker, Fowler, Nicholls, & Turner, 1988) compared to 8% of European Americans with working age disabilities (Walker, 1988). “The statistical data for Blacks with disabilities indicate that while they constitute 19% of all persons of working age with disabilities, they constitute just 8.6% of year-round full-time workers with disabilities” (Leung, 1993, p. 94). Likewise, 24% of all severely disabled working-age adults between the ages of 16-64 are African Americans (Bowe, 1992).

In an earlier study, Marshall (1987) reported that African Americans are more severely disabled than European Americans in the United States. If the current trend continues, the field of vocational rehabilitation could benefit by examining outcomes regarding African Americans and European Americans. This dissertation focuses on the
scrutiny of these outcomes and other differences of African Americans in the state VR system.

As discussed previously, African Americans and Hispanic Americans are overrepresented in all disability categories including chronic health conditions, language, sensory, physical, chronic health conditions and nervous and mental disorders. A disproportionately high number of under-age African Americans and Hispanics are diagnosed with mental retardation (Walker & Brown, 1996). Minority groups when compared to the dominate culture, are more vulnerable to various mental and nervous disorders (Walker & Orlean, 1996). Disproportionately, minority persons with disabilities are subjected to more bias when they seek rehabilitation, compared to European Americans (Herbert & Cheatham, 1988). This could be due to class or the skin color of the consumer.

Evaluating educational attainment, skills, and work experience, Alston and Mngadi (1992) reported that the consumer’s race affected the rehabilitation outcome. Regarding the general attitudes of European Americans, Wright (1983) submitted that the subjugation of minorities stems from the ethnocentrism perspective of European Americans. That is, people tend to perceive events and others through activities reinforced during their socialization process. Wright (1980) suggested that regardless of their true abilities, African Americans are excluded and not expected to perform well in school because of their race. Certain behaviors exhibited by minority consumers may reinforce stereotypes held by European Americans within the VR system. For example, a minority consumer who speaks a language other than English may be perceived as having a substandard culture or language pattern by the European American VR counselor.
Consequently, services and exceptions may differ from those offered to English speakers. Conversely, many minority consumers doubt themselves because of institutionalized attitudes that may influence their potential. It is reasonable to expect that rehabilitation experiences (e.g., acceptance into VR services) may be affected by the race of the consumer. “Stereotypic attitudes often impact upon a Black person’s acceptance into a needed program” (Atkins, 1988, p. 47). Some researchers believe that “handicapped white groups have a greater economic mobility and more chances of being assimilated into the larger society [than minorities]” (Ayers, 1969, p. 55). This may influence minorities being successfully rehabilitated and their potential income when they are successfully rehabilitated. Seemingly, the changing demographics and service patterns among African Americans and European Americans dictate the need for multicultural sensitivity and further research into VR service delivery.

A general observation concerning service patterns and types of services, shows that because European Americans receive more college/university training than African Americans, the pattern of service delivery does not indicate an unfair treatment by the VR agency. It is possible that consumers are receiving services that are needed to progress through the system. On the surface, receiving more VR services should not be judged as right or wrong or good or bad for the consumer. It is also important to convey that “the relationship between educational development and economic achievement is intricate. Racism decreases the quality of education for poor Blacks, thus limiting their economic opportunity” (Barnett, 1976, p. 18).
Organization of Literature Review

This literature review accents service delivery to African Americans and European Americans by the vocational rehabilitation system in the United States. Specifically, the literature review covers the service delivery within the state-federal vocational rehabilitation (VR) program. The literature analysis includes an analytical review of the literature as related to program access, program eligibility, services offered and outcomes.

For the purposes of this document, the terms Black and African American, White and European American and client and consumer are used interchangeably. The word minority refers to African Americans, Blacks, people of color, Hispanics, and Native Americans. Although the headings of people of color and racial minority includes many subgroups, it is becoming increasingly clear from the literature that hue is the common thread that the aforementioned captions have in common. Citing such groups with characteristics that appear to influence the VR system’s response is advantageous.

Because understanding patterns of services to African and European American consumers is complex, this literature review is arranged using both quantitative and qualitative salient studies. Because human service outcomes and practices are reported to be microcosms of society (Ayers, 1969; Feist-Price & Ford-Harris, 1994; Rubin et al., 1995; Sue, 1994; Thomas & Sillen, 1972; Wise, 1988), literature that affects African Americans and European Americans in closely related counseling areas appears.
Quantitative Studies

Introduction

This section reviews literature regarding quantitative outcome studies of African Americans and European Americans in the VR system. Several studies observed different VR outcomes for the two groups including acceptance rates, pattern of services, successful and unsuccessful closure rates, and weekly earnings at referral. Generally, this section will cover results obtained by methods of statistical analysis in which information was obtained through aggregate analysis. The first study, by Wheaton, Finch, Wilson, and Granello (in press), examined the number, type, and pattern of vocational rehabilitation services based on sex, race, and closure status. The investigation used the annual 1995, 911 data from a mid-western state.

Results indicated that African Americans (4.55) received more services than European Americans (4.34) at both levels of closure (Status 26 & 28), and in a separate analysis, the number of services received were related to successful closure (Status 26). The number of services received were found statistically significant between African Americans and European Americans. The number of services in Wheaton at al. (in press) concurred with a similar study by Wheaton, Wilson, and Brown, (1996) that African Americans were likely to receive more VR services than European Americans, and persons closed successfully received more VR services (5.07) than persons not closed successfully (3.97) (Wheaton et al., 1996). African Americans were grouped in clusters 1 and 5. Cluster 1 was named the comprehensive cluster because individuals received a wide variety of VR services. Cluster 5 was named the minimalist cluster because individuals received the fewest number of services. European Americans seemed to
group in cluster 4 which formed the counseling only cluster. Individuals in cluster 4 received primarily counseling. Race and cluster membership proved to be statistically significant (Wheaton et al., in press). The cluster description is mentioned to clarify the possible confusion between African Americans receiving the most VR services and the fewest VR services in Wheaton et al. (in press).

Wheaton et al. (in press) also looked at the types of services received by each race (African Americans and European Americans). European Americans received diagnostic, restoration, college training, and counseling more often. They were also twice as likely to have received college training than African Americans. African Americans were more likely to have received business/vocational, adjustment training, and maintenance. According to Wheaton et al. (1996), African Americans were likely to receive the following services: (a) adjustment training, (b) transportation, and (c) maintenance. In contrast, European Americans were more likely to receive (a) restoration, (b) college training, and (c) miscellaneous training. Peterson (1996) reported that European Americans received more academic training (college and university) or business or vocational training than African Americans.

In a similar study, Wheaton et al. (1996) investigated the number and type of VR services obtained by state rehabilitation agency consumers based on race, gender, and closure status. The authors reached the following conclusions that no differences were found between the proportion of European Americans and African Americans receiving diagnostic services, business or vocational training, on-the-job training, miscellaneous training, counseling, job referral, job placement assistance, or other services. In addition, European Americans were more likely to have received restoration and college-level...
schooling, and African Americans were more likely to have received adjustment training, transportation assistance, and maintenance.

In a similar study looking at VR services received, Peterson (1996) reported that African Americans were more likely to have received adjustment training, in contrast with European Americans with disabilities. African Americans who were successfully rehabilitated and males also tended to receive more VR services. The mean differences between the races were statistically significant as noted by Wheaton et al. (1996). Racial outcomes among African Americans and European Americans were complex and controversial with many possible reasons for discrepancies. Bolton and Cooper (1980) suggested that racial disparities in the college attendance of African and European Americans in the state vocational rehabilitation system may be attributed to the educational background of the two groups. In addition, there seems to be a disproportionate number of African American students enrolled in special education programs in the United States (Atkins & Wright 1980; Bedell, 1993; Feist-Price, 1995). The disproportionate number of African Americans in special education programs may be the result of several cultural barriers encountered in the educational process. Thus, assessment scores may be indicative of low college services received by these consumers one they enter the VR system.

Moore (1986) cites as an example of African Americans responding to questions posed to them. African Americans tended to be less responsive before completing the assessment process. Consequently, their scores will be lower than European American examinees. Moore also insinuated that poor test performance for African Americans results from a refusal to solve problems on command rather than a lack of accumulated
knowledge or abilities. "Distrust for the rehabilitation environment can negatively affect African American clients' motivation to perform during a vocational aptitude assessment" (Alston & McCowan, 1994, pp. 42-43). Unfortunately, inferences about one's level of intelligence, especially in vocational and school settings, is often based on one's fluency in standard English (Heath, 1989). It is reasonable to expect that the use of 'standard' English is another variable that could negatively impact VR services when dealing with African Americans.

Many variables can explain why African Americans are disproportionately enrolled in special education classes before and after vocational assessments are administered. Alston and McCowan (1994) contend that:

Ethnic minorities with disabilities present a distinct cultural challenge to the vocational aptitude assessment process. The group specific characteristics of African Americans with disabilities will likely influence the manner in which they approach the assessment situation and complete the psychometric instruments. (p. 45)

Using unique methods of assessment, Peterson (1996) studied the participation, progress, and outcome of individuals from diverse racial and ethnic backgrounds in Nevada's VR system. He reported that European Americans spent a longer time from application to case closure than African Americans. European Americans were more likely to receive academic training (college/university) or business or vocational schooling.

The academic training trends of African Americans and European Americans have been consistent in several different investigations (Atkins & Wright, 1980; Feist-
Price, 1995; Wheaton et al., in press; Wheaton et al., 1996). In the Peterson (1996) study, the number of observed differences between African Americans and European Americans was compared to expected numbers (e.g., comparisons of observed outcomes to expected outcomes based on makeup of population). Also, Peterson (1996) reported no differences between African Americans and European Americans in the four closure statuses (08, 26, 28, & 30), based on their expected numbers in the population. The groups, however, were not compared to each other; but the comparison of the VR or U.S. population. Additionally, Peterson reported that African Americans and European Americans were both overrepresented in VR service applications. When looking at observed and expected successful case closures (Status 26), African American consumers did not differ from expected numbers of successful case closures. European Americans did differ from their expected numbers in the population for successful closures. Therefore, more European Americans were closed than should have been closed, under the null hypothesis of independence. When examining whether consumers experienced work-related disabilities relative to their numbers in the population, there were no statistical differences among African Americans and European Americans (Peterson, 1996).

Regarding mean earning per week, European Americans had higher earnings at referral/application than did African Americans (Peterson, 1996). Several authors have indicated that European Americans are likely to earn more at referral relative to their African American counterparts (Atkins & Wright, 1980; Feist-Price, 1995; Fessler, 1994).

Race and ethnicity were found statistically significant when combined with demographic and/or predictive variables in predicting competitive employment. Although
race (European Americans) was found significant in predicting competitive employment, it was "concluded that service variables, or the provision of certain services, were much more related to successful closure in competitive employment than race" (Peterson, 1996, p. 106).

Peterson (1996) used the chi-square, multiple regression, and measure of association (Cramer’s V) in his dissertation. Using a measure of association, the author was able to discuss the practical implications of his findings. The use of multiple regression was also a strength in the study because he was able statistically to compare explanatory variables with each other. This unique statistical tool is a perceived strength because of its ability to evaluate the relative contribution of each explanatory variable in the regression equation.

This was a unique comparison because Peterson (1996), however, did not compare African Americans and European Americans with each other. The comparison was made relative to numbers in the population (VR or Nevada). This is a perceived weakness of the Peterson study. All other studies using the 911 data compared the groups to one another. Peterson’s comparison is interesting because people with disabilities were compared to those without disabilities in the general population. When comparing African Americans and European Americans with their respective percentages in the general population, there are no differences in VR eligibility and closure status (08, 26, 28, & 30).

Acceptance Rates

Another study by Wheaton (1995) examined the VR acceptance rates for African Americans and European Americans with disabilities. Wheaton concluded "that the
proportions of European Americans and African Americans found eligible for VR
services are not significantly different statistically” (p. 228). However, European
Amerians were found to have a higher acceptance rate (52.7%) than African Americans
(47.3%) in the study. The VR eligibility results found in Wheaton are in contrast to prior
research on VR eligibility, which asserted that African Americans (minorities) are less
often accepted for VR services than European Americans (Atkins & Wright, 1980; Bowe,
1992; Dziekan & Okocha, 1993; Feist-Price, 1995; Herbert & Martinez, 1992; Walker,
Belgrave, Banner, & Nicholls, 1986). “This study was not able to detect a statistically
significant difference between the acceptance rates of European Americans and African
Americans as had been suggested by other investigations, particularly Dziekan and
not hold the racial minority variable (African American, Hispanic, Native American &
Asian American) constant, as Wheaton (African Americans & European Americans) did
in his study. In addition, Dziekan and Okocha used the chi-square test statistic with a
large sample (n =13,311 to 18,320).

Wheaton (1995) used the chi-square test to examine the proportional differences
among African Americans and European Americans. The strength of the relationship
between the explanatory variables and the criterion variable was examined using the phi
coefficient and lambda, a method not usually employed by most studies using data in the
RSA-911 database. Using the phi coefficient as an estimate of effect size, Wheaton
attempted to answer the practical importance of the research question: What relationship,
if any, exists between the explanatory and criterion variables in the population? Using
statistics to examine the association between African Americans and European
Americans (e.g., the phi coefficient) allowed Wheaton to account for the additive effects of large sample sizes. Most studies using the 911 data to analyze outcomes among African Americans and European Americans in VR agencies lack this method when using large sample sizes. Using an association measure to access the practical implications is a strength in the Wheaton investigation. The results indicated no difference in VR eligibility between African Americans and European Americans. More research is needed because of the complex nature of VR eligibility.

Feist-Price (1995) investigated equity in VR services. The purpose of her study was to examine closure statuses (08, 26, 28 & 30) among African Americans and European Americans. She looked at acceptance, weekly earnings, education, pattern of services, employment and closure status. During referral, significant differences emerged in two demographic variables: (a) level of weekly income and (b) education. Proportionally, more African Americans were found ineligible for VR services when compared to European Americans. Further data discussed below:

Acceptance. Data indicated that 35% of African Americans who sought services were found eligible, while, 64.22% were assessed ineligible for rehabilitation services (Feist-Price, 1995). Exploring acceptance rates among African Americans and European Americans, Dziekan and Okocha (1993) reported that African Americans are less likely to be accepted than European Americans. The VR eligibility trend mentioned in Feist-Price appears in other studies (e.g., Atkins & Wright, 1980; Bowe, 1992; Walker et al., 1986).

Weekly earnings. "Weekly earning at referral included those who had no earnings as well as those identifying specific income" (Feist-Price, 1995, p. 123). More African
Americans (92.52%) than European Americans (88.24%) reported no earnings at referral. More European Americans (5.04%) than African Americans (3.74%) earned $100.00 or less. More European Americans (2.53% and 2.65%) than African Americans (1.38% & .15%) fell into the $101.00 to $150.00 and $151.00 to $250.00 income categories, respectively. In the $251.00 and above category, the percentage of African Americans (2.21%) was higher than European Americans (1.54%) (Feist-Price, 1995). Generally, African Americans tend to earn less that European Americans at referral. However, more African Americans were in the $250.00 and higher category than European Americans. To the extent that African Americans have fewer financial resources at referral, additional resources may assist this population matriculate through VR.

**Education.** Although education is not a criterion variable traditionally measured by the RSA-911 database, the educational level of consumers in the VR system may be a microcosm of society. Feist-Price (1995) reported that African Americans are more likely to earn less than European Americans after successfully completing VR. It is reasonable to expect that the findings by Feist-Price (1995) and others relate to placement and salary implications once consumers are successfully rehabilitated. Bolton and Cooper (1980) and Wheaton et al. (1996) suggested reasons why African Americans and European Americans receive college training at different rates once in the VR system.

A large percentage of African Americans and European Americans have completed the twelfth grade. More European Americans (13.25%) than African Americans (11.98%) completed 13 years of education. There was also “a higher proportion of African Americans (21%) compared with European Americans (15%) who ended postsecondary education in special education” (Feist-Price, 1995, pp. 122-124).
The proportionally higher rate for African Americans placement in special education is a common and recurring theme in the literature. For example, Baldwin (1987), Bedell (1993), Reschely, Kicklighter, and McKee (1988), Richert (1987), and Samuda (1975) reported that African American students are likely to be overrepresented in special education courses and underrepresented in gifted classes.

**Pattern of Services.** “Results identified three rehabilitation program continuum areas as statistically significant: accessibility, services delivery, and rehabilitation outcome” (Feist-Price, 1995, p. 123). Accessibility focused on acceptance for rehabilitation services. A “significantly larger proportion of European Americans than African Americans were provided with physical and mental restoration, hospitalization, convalescent care, college and university assistance, vocational school training, on-the-job training, personal and vocational adjustment training, maintenance services, and transportation” (Feist-Price, 1995, pp. 123-124). The study by Wheaton et al. (1996) also reported significant differences. European Americans received more restoration and college training services than African Americans. Atkins and Wright (1980) reported that European Americans received significantly more college and on-the-job training than African Americans. In contrast, African Americans received more adjustment training and maintenance in both the Atkins and Wright and the Wheaton et al. studies.

A significantly larger number of European Americans (92.0%) compared with African Americans (8.0%) received purchased services through the Department of Vocational Rehabilitation (Feist-Price, 1995). Most African Americans (30.6%) were in the $10,001 to $25,000 category in procured services. The largest percentage of European Americans (32.1%) had $1,001 to $5,000 in procured services (Feist-Price,
1995). Wise (1980) analyzed the equity and cost effectiveness of VR services among African Americans and European Americans and reported that less money was spent on the rehabilitation of African American consumers ($2,142.80) than on European Americans ($2,573.01) consumers. Funds spent on VR services increased as the amount per service (e.g., education) increases or decreases for a particular group. African Americans are receiving less college/university training than European Americans, which means that the total amount of funds spent on African Americans may decrease relative to education and other large service expenditures.

**Employment.** A statistical significance was found when comparing European Americans and African Americans on cases closed in competitive employment. The statistical significance favored European Americans in competitive employment in the Feist-Price (1995) study.

**Closure status.** Proportionally more African Americans were closed for reasons other than successful rehabilitation (status 26). Most European Americans (36.09%) were closed for refusing services. The percentage of African Americans closed because they refused services was 29.12%. African Americans (27.38%) were closed at a higher rate for lack of cooperation compared to European Americans 25.32% (Feist-Price, 1995). Atkins and Wright (1980) also reported that African American consumers more frequently had their cases closed for lack of cooperation. Although a consistent theme in the literature, it is not clear why African Americans were closed for lack of cooperation.

The Feist-Price (1995) investigation reported that "differences related to race or ethnicity are apparent in accessibility, service delivery, and outcomes. The findings indicate that African Americans are underrepresented as rehabilitation applicants and
clients when compared with disability prevalence data” (p. 126). The following findings by Feist-Price are consistent with prior research reported: (a) more African Americans are likely to be enrolled in special education classes at referral, (b) African Americans earn significantly less than their European American counterparts after closure, (c) African Americans tend to have lower levels of education at the time of referral, (d) African Americans are closed for lack or cooperation at a higher rate than European Americans, and (e) African Americans are more likely to be found ineligible for services than European Americans.

The discussion section of the Feist-Price (1995) forecasts that the rehabilitation profession needs more culturally sensitive counselors. Feist-Price (1995) asserted that because “African Americans may be viewed as more difficult to rehabilitate because of lower levels of education and more severe disabilities, more emphasis may be placed on those who are viewed as easier to rehabilitate, namely, European Americans” (p. 127). This explanation may account for much of the disparity between African Americans and European Americans in several VR outcome studies. This explanation illustrates a sensible inference that the VR system may be intentionally or unintentionally biased toward African Americans and other minorities.

Feist-Price (1995) analyzed most of her data using the chi-square test statistic and no test statistic to measure the relationship between the explanatory and criterion variables. This represents a weakness in her study. Large sample sizes (N = 70,695) contribute to the additive effect of the chi-square statistic and are likely to have numerous significant findings. In many cases, the practical importance is lost because of the ease of statistical significance with large samples. Using statistics to
explore the relationship between the explanatory variables (e.g., Cramer’s V or the Phi coefficient) and the criterion variables illustrates the practical importance of her study. When one has access to a large database of possible subjects, finding a statistically significant difference is not difficult. African Americans and European Americans have different reasons for case closure, type of services received, and job placements. Relative to the services received, African Americans may lag behind European Americans in services that assist with additional monetary resources.

In a unique study of client variables, Spitznagel and Saxon (1995) investigated the impact of client variables on the delivery of vocational evaluation and training services. The study analyzed the frequency of vocational evaluation services and types of vocational preparation in regards to a consumer’s age, gender, and ethnicity from fiscal years 1991 to 1992. The authors also examined successful rehabilitation closures (status 26) for consumers’ age categories and ethnic groups, and for the average cost per client or per ethnic group for each type of training.

Vocational evaluations for Black and White groups were given equal percentages of vocational evaluations given. The majority of successfully rehabilitated individuals did not receive vocational evaluations. When the average cost per vocational evaluation was compared by ethnic group, the cost of Blacks was more than half of Whites in this category. Additionally, the average cost for training Black consumers was more than Whites. Black clients used more work adjustment than for White clients (Spitznagel & Saxon, 1995).

Spitznagel and Saxon (1995) asserted that there is “a significant relationship between receiving vocational evaluation services and the client variables of ethnicity and
age" (p. 113). African Americans are less likely to receive business/vocational training, an assertion also reported by Peterson (1996). Not receiving business/vocational services contrasts directly with what Atkins and Wright (1980) and Feist-Price (1995) found in their investigations. These two studies revealed that Black consumers are more likely to receive business/vocational training and less likely to receive college/university training than their European American counter-parts. Whether Spitznagel and Saxon collapsed the college/university and business/vocational categories in their data analysis was unclear from their article.

This should not suggest that vocational evaluations are not vital to the rehabilitation process, as suggested by Spitznagel and Saxon (1995). "It could mean that vocational evaluations are reserved for those who have severe disabling conditions and/or have a greater barrier to economic independence" (Spitznagel & Saxon, 1995, p. 111).

Changing the scaling of age from a continuous variable to a categorical variable is understandable in the Spitznagel and Saxon (1995) study. Nonetheless, downgrading the scale of measurement from metric to categorical can result in the loss of statistical power. This is a weakness in the study.

In comparing the Wheaton et al. (1996) and Feist-Price (1995) studies with respect to the types of services received, Spitznagel and Saxon (1995) only looked at the distribution of vocational rehabilitation services and types of vocational training provided across age, gender, and ethnicity. Wheaton et al. (1995) examined the 1-13 possible services that consumers can receive across the primary explanatory variable of race. How African Americans and European Americans fared on college training, maintenance and
transportation services would have been interesting because these services seem to be consistently received by European and African Americans in the literature respectively.

Spitznagel and Saxon (1995) used the chi-square statistic as the test statistic in their investigation. Since large sample sizes ($N = 69,096$) contribute to the additive effect of the chi-square statistic, is possible to have numerous statistically significant findings. Using statistics to explore the relationship between the explanatory variables (e.g., Cramer’s $V$ or the Phi coefficient) and the criterion variables would address the practical importance of their study. Simply put, it is not difficult to find a significant difference when one has access to a large database of possible subjects. African American are more likely to receive work adjustment and may come to VR with more than a need for work adjustment services.

In another study exploring the acceptance rate as the criterion variable, Dziekan and Okocha (1993) investigated the differences in rehabilitation acceptance rates among minority and majority individuals with disabilities during FY 1985-89. The authors found a significant relationship between minority group status and the rate of acceptance for each of the five years they explored. Dziekan & Okocha reached the following conclusions:

On average, racial-ethnic minority individuals with disabilities applied for vocational rehabilitation services at a rate of 12.9%, which was higher than their representation of 7.8% within the general state population. The higher application rates of minority individuals may reflect a higher prevalence of disability affecting ability to work among minorities. (Dziekan & Okocha, 1993, p. 185)
Dziekan and Okocha’s assertion (1993) in the preceding quotation seems to have relevance to African Americans reporting a higher application rate and disability prevalence than disabled European Americans in the VR system. African Americans and Hispanics applying for VR services are less likely to be accepted. European Americans (60%) were accepted for vocational services at a higher rate than minorities (50%) individually and as a group (Dziekan & Okocha, 1993).

Atkins and Wright (1980) reported that African Americans are less likely to be accepted for rehabilitation services than European Americans. “Even though minority applicants applied for services at higher rates than their representation in the population, they were accepted for services at lower rates than majority applicants” (Dziekan & Okocha, 1993, p. 187). The acceptance rates between majority group members and minority group members proved to be statistically significant. Although speculative, Dziekan and Okocha offer the following explanation for acceptance rate factors between majority and minority clients:

Lower proportions of minority clients may have chosen not to follow through with the acceptance process because of their frustration with the steps and delays involved. Alternatively, biases in the perceptions of rehabilitation counselors determining eligibility for services may have resulted in inaccurate assessments and underestimation of rehabilitation potential. (p. 187)

Other studies explored annual data (Wheaton, 1995; Feist-Price, 1995; Herbert & Martinez, 1992), whereas Dziekan and Okocha (1993) compared several years (1985-1989). The Dziekan and Okocha investigation used the chi-square statistic as their test statistic, and did not utilize a statistic to measure the association between the explanatory
and criterion variables. This is a weakness in the study. Another weakness in the study centers on comparing majority and minority groups while grouping all minorities together under one heading. Consequently, results may not be able to address the practical implications of findings. Including a number of different races within the "minority" variable could have confounded the variable. The race variable could account for a portion of the extraneous variance in the Dziekan and Okocha study.

In a study of case service outcomes and ethnicity, Herbert and Martinez (1992) sought to determine whether the ethnicity of Anglo (European Americans) and non-Anglo (African Americans, White Hispanic, African American Hispanic and Asian Pacific Island) consumers would differ based on case service outcomes ( statuses 08, 26, 28 & 30). Other ethnic groups were compared and contrasted with Anglo clients regarding the outcome of case services, a similar approach to that used by Dziekan and Okocha (1993). Herbert and Martinez (1992) discovered significant differences in service outcomes between majority and minority individuals across the four above closure statuses.

Herbert and Martinez (1992) concluded that persons of color were more likely to be determined ineligible (40%) for vocational services and less likely to be successfully rehabilitated than White (33%) consumers. Whites (40%) had a significantly higher percentage of rehabilitation closures (1 out of 3) than Blacks. No differences were found between consumers in competitive, sheltered, and self-employment, homemaker, and unpaid family worker occupations. Among the five groups (Anglo, Black, White Hispanic, Black Hispanic and Asian Pacific Islander), Anglo consumers consistently had a higher acceptance rate. Other investigators (e.g., Atkins & Wright, 1980; Bowe, 1992;
Dziekan & Okocha, 1993; Feist-Price, 1995; Walker et al., 1986) reported that minorities are less likely to be accepted for VR services. The minority groups in the sample, Blacks and White Hispanics were more likely to be closed successfully.

On the surface, the closure results look encouraging for African Americans and White Hispanics in the study. Although there was a significant difference in the closure patterns among Anglo and non-Anglo participants, African Americans and White Hispanics were more apt to be closed than the other minority group (Asian Pacific Island) in the study. Thus, the consensus appears to be that minority groups are closed unsuccessfully more often than non-minority groups.

Various inferences for understanding consumer outcomes are noted in the Herbert and Martinez (1992) investigation: (a) the consumer’s culture may be misunderstood by the counselor; (b) the assessment phase may indicate values that are oppose societal norms; and (c) the counselor may ignore the consumer’s experiences during the counseling session. In order to assist consumers who possess different racial and ethnic backgrounds, vocational rehabilitation providers should be open to new ways of assessing potential biased attitudes within themselves. Such introspection will increase understanding of consumers if exposure is increased with diverse groups.

Herbert and Martinez suggested several reasons why higher numbers of Blacks and Black Hispanics and White Hispanics were being rejected for VR services:

If client values are ignored or misunderstood by the counselor, it is possible that persons of color may be denied service... As a result of racism, persons of color have experienced numerous occasions when condescending, ignorant, or
indifferent attitudes have played a prominent role in how social interactions evolves. (Herbert & Martinez, 1992, p. 13)

For example, Navajo consumers who were perceived as lacking self-disclosure and emotional responsiveness were likely viewed by counselors as being uncooperative, unreliable, and incapable of establishing adequate rapport (Morgan, Guy, Lee, & Cellin, 1986). The inference here is one of a possible self-fulfilling prophecy between the VR agency and consumers with diverse backgrounds. The results in the Herbert and Martinez study are encouraging in some areas. Specifically, once persons of color were determined eligible for services, no differences were reported across statuses 28 or 30.

A possible weakness in the study is one that was mentioned in the investigation by Dziekan and Okocha (1993). When comparing majority and minority groups, Herbert and Martinez (1992) collapsed all minority groups under the heading of minority groups, which could account for a portion of the extraneous variance in the study. Herbert and Martinez (1992) used the chi-square statistic as the test statistic in the study.

Another possible weakness of the Herbert and Martinez (1992) study is that it did not use a statistic to measure the relationship between the explanatory and criterion variables. Using an additional statistic to observe any relationship between the explanatory and criterion variables may have strengthened the study for reasons previously cited. Since the variables are scaled and presented in a multidichotomous fashion, the Cramer’s $V$ statistic could have been helpful in measuring the relationship between variables. African Americans are rejected more from VR services than European Americans and are less likely to be rehabilitated than European Americans. If
African American are not rehabilitated relative to European Americans. Service delivery may still be a concern when addressing VR outcomes.

In a national study using the RSA annual reports, Giles (1992) summarized the delivery of services to Whites and non-whites using descriptive data. He reported several findings regarding rehabilitated cases comparing Blacks and Whites.

**Rehabilitated case.** Blacks (18.2%) represented all rehabilitated cases in the 1984 fiscal year compared to Whites (79.9%). In fiscal year 1986, Blacks represented 18.3% of all rehabilitated cases (U.S. Department of Education, RSA 1989). For the fiscal year 1986, Blacks represented 18.3% of all rehabilitated cases. In 1988 and 1989, Giles (1992) reported that the numbers declined to 17.7% and 17.4% respectively (U.S. Department of Education, RSA, 1990). During fiscal year 1989, rehabilitated White consumers increased to 80.7%. The following percentages by Giles may also substantiate reported information by Marshall (1987) and Bowe (1992) regarding the association between disability status and ethnicity:

The proportion of Blacks with a working-age disability was 13.0% in 1984 followed by an increase to 13.7% in 1988. For the same period between 1984 to 1988, the number of Whites by proportion with a work disability fell from 8.1% to 7.9%, respectively. (p. 87)

Minorities with disabilities tend to be found ineligible and accepted less for rehabilitation services when compared to Whites in the U.S. (Bowe, 1992). Once accepted for VR services, minorities tend not to be rehabilitated and are afforded fewer academic training opportunities than Whites. Although African Americans with work-related disabilities increased between 1984 and 1989, the total number of
African-Americans who were rehabilitated by RSA decreased during the same period (Giles, 1992). Few articles addressed national RSA outcome data for multiple fiscal years comparing African Americans and European Americans in vocational rehabilitation outcomes as reported by the descriptive data used by Giles.

The proportions of African Americans and European Americans successfully rehabilitated may indicate that our rehabilitation system is not meeting the needs of African American consumers (Giles, 1992). Atkins and Wright (1980) in their landmark investigation reported similar claims between African American and European American VR consumers.

A weakness in the Giles (1992) investigation was the use of only descriptive statistics to explain discrepancies in VR services between African and European Americans. The target population appeared to be VR consumers in the U.S., but it is not clear whether the author used a census population. Finally, Giles' methodology failed to report any statistical significance regarding any of his findings. This is not surprising because he only reported descriptive statistics. African Americans are more likely to have a disability than European Americans. It is unclear whether disability prevalence is a perquisite for additional VR services.

Using a multivariate analysis technique, Belgrave and Walker (1991a) performed a discriminate analysis to identify variables that best distinguished between African Americans employed and unemployed. It was also used to determine the amount of variance in employment outcomes accounted for by the explanatory variables. Specifically, source of transportation was the strongest discriminating variable in the study. "African Americans were much more likely to report that their primary source of
transportation to medical appointments was public transportation. 34% for African Americans compared to 7% for Whites” (Belgrave & Walker, 1991b, p. 28).

Interestingly, public transportation was statistically significant in both the Belgrave and Walker (1991a) and Belgrave and Walker (1991b) studies. Both studies used discriminate analysis and the chi-square test of independence.

Likewise, when observing African Americans with a particular disability (substance abuse), lack of transportation was discovered to be a barrier to rehabilitation services among African Americans (Brown, 1993). The investigations of Belgrave and Walker (1991a), Belgrave and Walker (1991b), and Brown (1993) appeared to confirm similar patterns of services by other authors (e.g., Atkins & Wright, 1980; Wheaton et al., 1996), where African Americans were more likely to receive transportation services than European Americans.

Although the use of a multivariate analysis was viewed as a strength in the Belgrave and Walker (1991a) study, the sample size was considered a weakness. Consequently, the discriminant function may not have been as stable and potent if other samples were drawn from the same population. Customarily, a sample ratio of 50/1 is suggested when using a multivariate analysis technique. The sample ratio in the Belgrave & Walker study is approximately 11/1. Apart from the sample criticisms, it was reasonable to expect that Atkins and Wright (1980) and Wheaton et al. (1996) would add convergent validity to the results of their study despite the sample ratio used. African Americans are more dependent on public transportation than European Americans. Thus, African Americans may miss or be tardy to VR appointments more than European
Americans. It is possible that reliance on public transportation may yield unfavorable
close statuses within the VR system.

In a similar study, Belgrave and Walker (1991b) investigated the differences in
rehabilitation services utilization patterns. This national study polled a sample of 228
clients from private and public rehabilitation facilities throughout the United States.
Researchers asked subjects whether they received physical therapy, occupational therapy,
vocational rehabilitation services, social services, other counseling services, and/or
follow-up care by a physician. Belgrave and Walker (1991b) reported that White and
Black Americans did not differ on most of the demographic variables. The authors
compared the two groups and reported on education, income levels, and insurance.

Education. White Americans (65.9%) had slightly more education at the high
school level than Blacks (55.2%) (Belgrave & Walker, 1991b). As a predictor of
employment for African Americans, James, Devivo, and Richards (1993) found that
“Education was a much stronger predictor of employment for African-Americans than
Whites” (p. 159).

Income. “A higher percentage of Whites than African Americans had higher
levels of income from employment; 26.7% of Whites had income over $20,000 (versus
only 8% African Americans)” (Belgrave & Walker, 1991b, p. 26).

Insurance. “Medicaid was the largest source of medical insurance for both
African Americans (52.9%) and Whites (57.5%). However, a larger percentage of
Whites than African Americans reported having private insurance, 35% in contrast to
25.8%” (Belgrave & Walker, 1991b, p. 26).
African Americans (20%) were less likely to report receiving physical therapy than European Americans (41%). African Americans accounted for only 3% compared to 34% of European Americans receiving occupational therapy (Belgrave & Walker, 1991b). “Twenty percent of African Americans reported receiving counseling services while 46% of White Americans reported receiving counseling services—a difference significant at the .001 level” (Belgrave & Walker, 1991b, p. 28). Although not found statistically significant, the study also revealed that African Americans (49%) were less likely to report receiving social services compared to European Americans (55%). Furthermore, Belgrave and Walker (1991b) expected to find a significant difference in frequencies for African Americans who reported visiting more medical personnel. This was not the case. A smaller percentage of African Americans (20%) than European Americans (27%) reported that they received follow-up care from a physician in their study. The Belgrave and Walker study contained the following areas in their investigation: (a) perception of disability; (b) economic factors; (c) access factors; (d) attitudinal factors; and (e) referrals to rehabilitation services.

**Perception of disability.** “While reporting fewer rehabilitation services, African Americans (compared to Whites) were more likely to perceive their disability as interfering in daily activities such as employment (p < .05) and physical activities (p < .01)” (Belgrave & Walker, 1991b, p. 28).

**Economic factors.** Since African Americans were underrepresented at higher income levels, finances may contribute to the disproportionate number of services received. Also, African Americans were less likely to have private insurance which could cover the costs of particular rehabilitation services (Belgrave & Walker, 1991b).
Access factors. Since African Americans reported a higher dependency on public transportation (Brown, 1993; Wheaton et al, in press; Wheaton et al., 1996), going to medical appointments could have been problematic. African Americans often need access to services located in predominately European American neighborhoods (Belgrave & Walker, 1991b). Similarly, Jereb (1982) alleged that African American consumers may not engage the rehabilitation process due to a lack of counselors who understand the African American perspective.

Attitudinal factors. Belgrave and Walker (1991b) assert the following regarding attitudinal factors:

Beliefs in the efficacy of rehabilitation services may differ for African Americans and Whites. African Americans may hold the beliefs that rehabilitation services such as physical therapy and occupational therapy may not benefit them far as their disability is ‘God’s will. (p. 29)

Referrals to rehabilitation services. The investigation did not address whether different numbers in referrals could have accounted for the observed discrepancy, a perceived weakness in the investigation. However, Beigrave and Walker (1991b) reported that African Americans and European Americans received the same percentage of vocational rehabilitation services. African Americans’ perception of the vocational rehabilitation system and transportation concerns are important variables to consider when appraising options for successful outcomes for any VR consumer.

Since no test statistic was reported, this researcher assumes that the chi-square test statistic was used to calculate percentages in the Belgrave and Walker (1991b) investigation. Using the Phi coefficient or Cramer’s V may have yielded additional
information about the nature of the relationship between the explanatory and criterion variables. African Americans have access problems relative to rehabilitation service delivery. Because a growing number of the disabled population will be minority, VR faces challenges to increase the utilization patterns of VR to African Americans (minorities).

In a relatively unique study that examined both quantitative and qualitative outcomes of VR consumers, Wise (1988) explored program equity and effectiveness pertaining to discrimination against subgroups of consumers in the vocational rehabilitation system by considering cost effectiveness and rehabilitation practitioners’ perceptions of consumers. This is a notable study because it joins both quantitative (cost-benefit analyses) and qualitative (perceptions of consumers) research questions under one umbrella of knowing, which is rarely implemented in published VR outcome investigations using RSA-911 data.

The subgroups (Black & White) significantly differed at closure. Consumer data revealed bias by race, gender, and severity of disability, and revealed that African American rehabilitants earned 15% less than their European American counterparts. Similarly, less money was spent on the rehabilitation of African American consumers than on European American consumers. African American consumers earned less after the rehabilitation process than European American consumers (Wise, 1988). Concerning counselors’ perceptions, Wise reported the following:

Counselors’ responses reflected more concern for closing cases in Status 26 than for making sure the clients were actually rehabilitated. Such affected the length of time services were offered, the types of services that were offered, the amount
of funds expended, the reasons for closure and adherence to manual guidelines.

(p. 69)

Responding to the question of counselors’ perceptions of service and equity and effectiveness, eighty percent of the counselors reported that more effective service would be rendered if counselors did not have to worry about meeting Status 26 quota closures (Wise, 1988).

As confirmed by Atkins and Wright (1980) and Bolton and Cooper (1980), African Americans tend to earn less than European Americans at closure. Malik (1973) evaluated whether outcomes were related to race and rehabilitation services. He found that non-white consumers earned less money in equivalent areas of employment. At successful closure (status 26), severely disabled African American male consumers on the average earned less income than severely disabled European American male consumers. Feist-Price (1995) reported that “African Americans whose cases were closed as ‘successfully rehabilitated’ were more likely than European Americans to be in the lower income levels” (p. 119). According to Feist-Price and Malik, ethnicity may influence earnings and job type once successfully closed.

Education another variable related to financial outcomes of African American consumers is education. Both Wise (1988) and Ayers (1969) reported that the VR system is a microcosm of society's attitude toward African Americans. Wise (1988) used the chi-square statistic as the test statistic in the study. Using a statistic to measure relationships between the explanatory and criterion variables may have strengthened the investigation. Additionally, reliability and validity coefficients were not reported for the
multiple-choice questionnaire. The researcher does not know whether the instrument is measuring what it is supposed to measure (validity). If so, is the instrument consistently measuring what it is supposed to measure (reliability)?

Ross and Biggi (1986) explored VR service delivery issues at referral (02) and closure (08, 26 28, 30) in providing services to Whites and minorities. The authors discovered that placement rates for successful closures with White consumers increased 2%, while those for the nonwhite population decreased 18%. According to the rehabilitation rate for the sample, whites increased 4%, while the rehabilitation rate for nonwhites decreased 4.5%. The competitive placement for Whites increased by half of a percent while the competitive placement rates for the nonwhite population increased 2.5%.

It is sensible to infer from Feist-Price (1995), Malik (1973) and Ross and Biggi that ethnicity may influence earnings, job type and placement rates once VR consumers are successfully rehabilitated. When client earnings were observed at or above minimum wage, it was determined that White placement rates declined 1.5% while the placement rates for nonwhites increased 11%. The White and minority group did not differ significantly, regarding the need for services not received. Individuals with less than a high school education were more likely be unemployed. Most clients rated their counselors as understanding their problems and Black clients usually rated their counselors good (Ross & Biggi, 1986).

A relatively consistent finding in the study revealed that the majority of White consumers most often cited “refused services” as the reason for closure, and black consumers cited “failure to cooperate” as the most cited reason for closure. Nonwhite
clients were more likely to be successfully rehabilitated at or above minimum wage, in addition to being closed unsuccessfully rehabilitated. Both groups reported self-referral as the primary referral source (Ross & Biggi, 1986). Failure to cooperate among African Americans was also reported as a primary reason for closure in other studies (Atkins & Wright, 1980; Danek & Lawrence, 1982; Ross & Biggi).

Ross and Biggi (1986) used the Chi-square, correlation, and regression methods as their primary statistics for their investigation. Although a reasonable assumption can be inferred, the authors did not mention the specific regression and correctional method used in the investigation. Regarding the use of the survey instrument in the study, no reliability or validity coefficients were displayed to show whether the instrument is reliable and valid with the population surveyed. The minimal return rate with the survey leaves no evidence to show whether follow-up procedures were used to gain additional information on the population who did not return the instrument. European Americans tend to increase their rate of employment, once they are successfully rehabilitated. This is not true for African Americans. Placement rates are significantly lower for minorities after successfully being rehabilitated. More research is needed to gain knowledge about this outcome discrepancy.

The next investigation speculated about various inferences such as client-counselor racial similarity to influence VR outcomes. Danek and Lawrence (1982) investigated the racial similarity between client and counselor and rehabilitation outcomes. Specifically, the study examined African Americans and European Americans relative to the (a) proportion of successful case closures, (b) the consistency of the initial
vocational objective with ultimate vocational outcomes, and (c) the amount of time it takes for a client to be accepted for VR services.

"The most salient finding of this study is the conclusion that client-counselor racial similarity is not related to observed differences in rehabilitation success among black and white clients" (Danek & Lawrence, 1982, p. 57). Danek and Lawrence noted the following: "The findings in this study did corroborate the Atkins and Wright (1980) research relative to successful case closure for black and white clients. White clients in the present study more frequently had their cases closed successfully" (p. 57), when compared to black clients. Furthermore, Black clients spent a longer time in the evaluation process before acceptance as noted by the authors.

Regarding acceptance to VR services, Black clients were less likely to attain successful case closure when compared to White clients. White clients took less time to be accepted for services than did Black clients. Black clients’ cases were more frequently closed for lack of cooperation, which was also supported by Atkins and Wright (1980), Danek and Lawrence (1982), and Ross and Biggi (1986). White clients were frequently closed for "refused services." Sue and Sue (1990) reported that after one contact with a counselor, African Americans had a 50% termination rate compared to 30% for European Americans. It is reasonable to infer that the discrepancy in termination rates among African and European Americans is possibly a multicultural issue. Cultural components influence the VR process because of the lack of Africentric models to promote personal, social, and vocational adjustment. Eurocentric models are deficient in addressing the needs and interests of African Americans with disabilities (Herbert & Cheatham, 1988). African Americans were supported by both public and
private assistance at referral, whereas White clients were frequently supported by family
and friends at referral (Denek & Lawrence, 1982).

When comparing Black and White consumers of equivalent academic
backgrounds, Black consumers tend to be underrepresented in several areas (e.g.,
managerial, technical and professional positions). Holding constant the level of education
between disabled Blacks and Whites, evidence suggested that Black consumers were
underemployed relative to White consumers. Whites were more likely to be employed in
managerial and professional positions than Black consumers. Black consumers were
found to have a higher incidence of behavioral and severe mental retardation, but not
found to be proportionally more severely disabled, as subsequent studies have indicated
(Bowe, 1992; Denek & Lawrence, 1982; Marshall, 1987; Walker, 1988). Atkins and
Wright (1980) also found that Blacks tended to be diagnosed with mental retardation
more than Whites in the general population.

Regarding client-counselor case load racial similarity, Danek and Lawrence
(1982) noted that Black counselors had predominately Black consumers in their case
loads. As concluded by Danek and Lawrence, if this was a deliberate policy, perhaps the
rationale of the policy should be reevaluated. Black counselors can serve as role models
without contributing to measurable outcomes. It is obvious and routinely documented
that Black clients prefer Black counselors. It is also reasonable to expect that White
consumers are more comfortable with White counselors.

Atkins and Wright (1980) reported that Black consumers tended to have less
success in being closed and were diagnosed with mental retardation more often than in
the general population of Black consumers, when compared to the majority group.
Again, the latter results of the investigation were consistent with the evidence found in similar outcome studies.

Danek and Lawrence (1982) used a series of forced order multiple regression equations, entering the race of the client and counselor similarity into the equation last, thus controlling for the variables previously entered. Additionally, the chi-square and t-test were used as test statistics in their investigation. Regarding reasons for non-acceptance, it might have been helpful to list the second reason why Blacks and Whites were not accepted for VR services. Client-counselor racial similarity was not related to VR success. However, more European Americans were closed successfully rehabilitated than African Americans. Additional research is needed to determine whether client-counselor similarity makes a difference in VR success.

The most referenced study of VR outcomes among African Americans and European Americans is Atkins and Wright (1980). The central findings of the article emphasized the unequal treatment of African Americans within the vocational rehabilitation system. This was a national investigation using RSA-911 data that compared African Americans and European Americans on several variables including: (a) education at referral, (b) primary source of support at referral, (c) weekly earnings at referral, (d) reasons for non-acceptance, (e) patterns of services, (d) funds spent for case services, and (e) weekly earnings at closure.

**Education at referral.** Approximately twice as many European Americans (12.18%) as African Americans (6.24%) completed 13 or more years of schooling. The largest percentage of African Americans concluded their education between grades 9 through 11 while European Americans achieved 12 or more years of schooling. A
substantially larger percentage of African Americans (20.53%) as compared to European Americans (11.52%), had been enrolled in special education programs (Atkins & Wright, 1980). Bedell (1993), Feist-Price (1995), and others agreed that African Americans are overrepresented in special education courses relative to European Americans, a recurring theme in the educational literature.

**Primary source of support at referral.** African Americans referred for VR services were more likely to be financially impoverished and on welfare than were European Americans. Almost twice as many African Americans (20.15%) as European Americans (11.08) reported public assistance as their major source of support. Atkins and Wright (1980) reported that family and friends provided the largest percentage of assistance for both races. Proportionately more European Americans (48.52%) than African Americans (43.73%) identified themselves as receiving funds from family members (Atkins & Wright, 1980). Likewise, Danek and Lawrence (1982) also reported that European Americans received support from family and friends at referral, also a consistent theme in the VR literature.

**Weekly earnings at referral.** Weekly earnings at referral were identified for consumers with no earnings and those who were categorized in specific income categories. In the $100.00 or less category, more African Americans (13.66%) than European Americans (11.88%) reported earnings, but in the $100.00 and over category, more European Americans (6.68%) than African Americans (4.08%) were reported. In the earnings at or above $200.00 category, African Americans (0.30%) were almost four times less likely than European Americans (1.11%) to earn this amount (Atkins & Wright, 1980).
Reasons for non-acceptance. African Americans (12.09%) were rejected for failure to cooperate more than European Americans (8.59%). Lack of a handicap was cited as the reason for not accepting African Americans (7.25%) for vocational services versus European Americans (4.41%). Furthermore, 6.18% of African Americans compared to 3.13% of European Americans were rejected because of a non-disabling condition (Atkins & Wright, 1980).

Race, education and the pattern of services. Differences were visible among the VR service patterns for Black and White clients who received different educational services, e.g., college or university, business school, or vocational school. In spite of a great need for more training, Black clients received less college or university training than their White counterparts. Specifically, Blacks (5.14%) were less likely to receive educational training than Whites (11.29) (Atkins & Wright, 1980).

Funds spent for case services. Atkins and Wright (1980) noted that “as the amount of money spent for case services increased, the proportionate share given to Whites increased as compared to Blacks” (p. 44).

Weekly earnings at closure for rehabilitated clients. “Black rehabilitants entered the process with greater educational and other needs but received less service; it follows that their rehabilitation did not raise them to an equal employment status with White rehabilitants” (p. 44). Specifically, Atkins and Wright (1980) noted that of rehabilitated consumers closed, weekly earnings of Whites were consistently larger than Blacks’ earnings in the $100.00 and over category. In the higher income levels ($200.00 or more), the difference was more noticeable. Whites (7.34%) earned almost three times as much as Blacks earned (2.98%) (Atkins & Wright, 1980).
The inquiry by Atkins and Wright (1980) was timely and considered a seminal study in the field of Vocational Rehabilitation. Prior to the analysis of the Atkins and Wright investigation, little was published regarding outcome studies comparing African and European Americans with disabilities.

In the discussion section of the Atkins and Wright (1980) investigation, the word "unmotivated" was directed towards blaming the consumer, though "unmotivated" may have been unwarranted, specifically when the inferences of the article were directed towards the divergent patterns of VR services by race. Based on the research that has surfaced recently, Kirchner (1987) stated that "the functions of rehabilitation include personal adjustment counseling, vocational counseling, job training, and assistance with job placement. Fulfillment of these functions depend partly on client variables such as race, work history, and educational level. However, counselor variables such as cultural biases and prejudices are equally important in influencing rehabilitation outcome" (pp. 14-15). The researcher suggests that referring to African Americans as "unmotivated" could be perpetuating a commonly held belief by European Americans that African Americans are lazy and unprofessional. Personal variables, such as education, financial resources, race, and transportation, may hamper the vocational progress of African American consumers.

According to Atkins and Wright (1980), "Blacks fare worse than Whites at every step from referral to closure" (p. 44). It is possible to see a linear relationship between education, closure rates, funds spent for case services, and weekly earnings. More research is needed in this area. However, Atkins and Wright noted that funds spent for case services were higher for European Americans than African Americans as case
services increased. Possibly, services that European Americans are more likely to receive (e.g., college), are proportionally more expensive than services received by African Americans (e.g., service occupations), yielding more funds being spent on European Americans than African Americans in the VR process. Care must be taken, however, as more funds allocated to European Americans does not necessarily constitute biased attitudes or inequitable services delivery by the VR system.

"Of the 41 chi-square tests calculated, 37 were statistically significant at the .005 level, 1 was statistically significant at the .05 level, 1 was statistically significant at the .10 level and 2 were not statistically significant" (Atkins & Wright, 1980, p. 42). Atkins and Wright also used the chi-square test statistic as the analysis tool to evaluate the data in their investigation. Once more, a test statistic to measure association would have been appropriate because large samples tend to increase the additive effect in the Atkins and Wright study. Large samples can influence whether or not a statistical significance is observed, so the measure of association allows the researcher to discuss the relative importance of their findings. The relational statistic should have also been used to assess the relative importance of their findings when employing such a large sample size. Not using a relational statistic is a weakness in the Atkins and Wright study. African Americans tended to receive different services than their counterparts. Are African Americans and European Americans receiving the services they need? Perhaps, a review of case files may shed light on whether the patterns of services are mutually agreed upon.

Bolton and Cooper (1980) were invited to react to Atkins and Wright's (1980) study. Bolton and Cooper discovered, as did Dziekan & Okocha (1993), that African Americans are less likely to be accepted for vocational rehabilitation services.
Nevertheless, the difference of 5.5%, after recalculating the data from the research by Atkins and Wright, may not be considered significant without considering other variables. In some cases, Atkins and Wright’s study only reported proportional differences that may or may not have been statistically significant (Wheaton et al., 1996). Thus, the interpretation of the findings in the Atkins and Wright study continue to be debated regarding race and other demographic information that may influence rehabilitation outcomes.

**Reason for nonacceptance.** Bolton and Cooper (1980) reported the following reasons for nonacceptance from the Atkins and Wright (1980) data: Failure to cooperate (12.1% vs. 8.6%), no disabling condition (6.2% vs. 3.1%), and no vocational handicap (7.3% vs. 4.4%) for Blacks and Whites, respectively. Atkins and Wright reported that these differences suggested that Blacks were not being treated equitably in the VR system. Bolton and Cooper appear to disagree with the Atkins and Wright findings on two levels. If statistically significant, personal variables (e.g., race, income & education) prior to entering the VR system should not reflect on the VR agency. Since Atkins and Wright reported proportions and percentage, outcomes were speculative at best, when interpreted by Bolton and Cooper. Percentages may not be statistically significant.

**Acceptance rate.** There was a difference of 7.3% between African Americans (57.7%) and European Americans (65.0%) regarding rate of acceptance among the two groups. “How should this difference of 7.3% be interpreted? It may simply reflect the greater case difficulty of black clients. Or, it could be the result of less adequate service provision for black clients” (Bolton & Cooper, 1980, p. 47). Other researchers (Atkins & Wright, 1980; Bowe, 1992; Dziekan & Okocha, 1993; Feist-Price, 1995; Herbert &
Martinez, 1992; Walker et al., 1986) reported that African Americans were less likely to be accepted for VR services.

**Patterns of services.** Bolton and Cooper (1980) agreed with Atkins and Wright (1980) that proportionally fewer Blacks compared to Whites attend college or university training (6.1% vs. 13.3%). Bolton and Cooper further asserted that the proportions of Blacks and Whites were approximately the same in vocational school (11.4% vs. 11.8%), business school (3.3% vs. 4.1%), and training programs (6.5% vs. 6.6%). A possible explanation for the difference in college and university training could be “attributed to the difference in qualifications of black and white clients accepted into the VR program; i.e., fewer Blacks were high school graduates (31.2% vs. 44.7%)” (pp. 47-48).

Considering the many intercorrelations of human behavior, this may be a reasonable inference by Bolton and Cooper.

Opinions and interpretations concerning the Atkins and Wright (1980) article are varied. Bolton and Cooper’s (1980) interpretations generally centered on blaming the victim. For example, “racial membership is an irrelevant consideration and any attempt to equalize the opportunities of black clients by providing them with more extensive VR services would constitute a form of reverse discrimination” (p. 48). Higgins and Warner (1975) similarity reported that race is not a factor when counseling African American consumers. In contrast to Bolton and Cooper's assertion, subsequent studies have provided evidence that race is a factor when counseling people of color (e.g., Asbury, Walker, Belgrave, Maholmes, & Green, 1994).

Bolton and Cooper (1980) suggested that the general population African Americans (percent in U.S.) should be compared with the percentage of those not
accepted for VR services. Their argument suggests that this comparison will give a more accurate picture of the eligibility decision within VR. Comparing the proportion of African Americans in the general U.S. population to those with disabilities could be inefficient. Perhaps this comparison is like comparing apples (non-disabled) and oranges (disabled). This proposed comparison of disabled to nondisabled African Americans and European Americans is a weakness in the Bolton and Cooper eligibility argument.

If the VR system knowingly needs assistance in assessing and servicing the African American population, it should incur expenses to do so within limits. If not, this line of thinking put forth by Bolton and Cooper (1980) in the aforementioned study could be closely related to an ethnocentric ideology, as submitted by Wright (1983). The researcher will concede that more evidence has surfaced regarding the divergent views of African and European American researchers on VR outcome influences. The views of the larger society are macrocosmic to the VR system in service delivery for those who are different from the majority group, according to Atkins and Wright (1980), Ayers (1969), and Sue (1994 b). As projected y Bolton Cooper and regarding VR outcomes for African Americans and European Americans, the VR system should not be held accountable for personal variables that African American bring to VR. One must pay close attention to personal variables that consumers bring to the counseling relationship. Ignoring personal demographic information is dangerous because of the closeness inferred by this statement.
Qualitative Studies

Introduction

This section reviews literature regarding qualitative measures in VR and related delivery systems primarily concerning African Americans and European Americans. This section includes client-counselor stress in relation to disabled and minority clients, the effects of client and counselor perceptions on access and delivery of VR services, and culture mistrust issues in the delivery of services to minority clients. The Alston and Bell (1996) article describes and delineates the manifestations of cultural mistrust regarding African Americans with disabilities. Below are some conclusions reached by the authors:

Cultural mistrust is one of several characteristics of African Americans with disabilities that may influence the manner in which they approach the rehabilitation system and interact with its professionals. It is important to note that cultural mistrust is not intrinsically negative. Ideally, the likelihood of rehabilitation entry and success for African American clients will be greatly enhanced by professional awareness concerning cultural mistrust and knowledge of strategies to control its effects on the rehabilitation process. (Alston & Bell, 1996, p. 19)

Speaking precisely about cultural mistrust issues, Brewington, Daren, Arella, and Randell (1990) suggested three variables that may influence success or failure of VR service delivery. Client variables included temperament, motivation, educational level, skills possessed, work experience, educational attainment, and interest. Program variables encompassed the availability of resources and the number of staff. Societal variables and societal factors may include conventional attitudes affecting the delivery of
service to African American clients. “Although the interplay among the three factors is an intricate one, client variables have a profound influence on successful rehabilitation and may help to explain the low representation and poor success of African Americans in rehabilitation” (Alston & Bell, 1996, p. 16). According to Terrell and Terrell (1981), cultural mistrust is bred by negative interactions and mistreatment by the larger society (e.g., racism and biased attitudes towards African Americans). It is characterized by mistrust in other people. Additionally, the manifestations of cultural mistrust are important when looking at influences of VR outcomes between African and European American VR consumers.

Manifestations of cultural mistrust. Therapeutic manifestations or cultural mistrust may include: (a) low expectations when counseling with a White counselor, (b) contrary attitudes about seeking support when the agency is primarily staffed by Whites; (c) consequently, the number of self-disclosures to White counselors may be low when compared to Black counselors; and (4) higher levels of premature termination of therapy with White counselors when compared to Black counselors (Nickerson, Helms, & Terrell, 1994; Thompson, Worthington, & Atkinson, 1994). Examples of therapeutic mistrust may include less eye contact by African American consumers towards European American counselors, and the different termination rates between the two groups. More specifically, African American clients assigned to European American counselors were found to expect European American counselors to be less accepting, less trustworthy, and less of an expert in their field than African American counselors. Additionally, African American consumers expected less relative to therapeutic outcomes when engaging in therapy with European American counselors (Watkins & Terrell, 1988).
In another study by Watkins, Terrell, Miller, and Terrell (1989), African American consumers found European American counselors to be less genuine, less reliable, and less credible in assisting them with their problems. Bordin (1955) and Singer (1970) asserted that expectations of consumers can affect the therapeutic process and consumers' relating to counselors. If expectations influence the therapeutic process in VR services, it is sensible to expect that self-disclosure may also have an impact on the therapeutic process for African American consumers.

Client self-disclosure is essential to a productive and therapeutic relationship between the client and the counselor (Cozby, 1973; Jourard, 1971; Ridley, 1984).

As suggested by Griffith (1977), Ridley (1984), and Williams and Kirkland (1971), African American clients may disclose less to White counselors during the rehabilitative process. African American consumers feel that European American VR counselors will misunderstand them based on stereotypes. Again, it is reasonable to expect that a lack of rapport and intimacy will impede the rehabilitative process because of the level of mistrust that African American consumers have for European American counselors (Alston & Bell, 1996).

Although research on cultural mistrust has been conducted primarily within the sociological and psychological areas and with non-disabled African Americans, it applies to African Americans with disabilities is applicable (Alston & Bell, 1996). The counseling process can be both beneficial and productive to African Americans if European American counselors understand various perceptions held by their African American consumers. Moreover, it may be insufficient for European American counselors to understand perceptual beliefs of African Americans. Successful
implementation strategies to engage the African American client in perceiving the European American counselors in a positive and helpful way must follow understanding. Attitudinal and perceptual variables are also meaningful when accessing issues for African Americans with disabilities.

Sheppard, Bunton, Menifee, and Rocha (1995) investigated the perceptions of minority group members with disabilities pertaining to VR services in the State of Michigan, using a focus group methodology. Responses were consistent across all nine questions and groups (African Americans, Asians, Hispanics, & Native Americans with disabilities). "Many participants noted that having a rehabilitation service provider of the same racial or ethnic background offered an advantage in establishing trust in dealing with such issues as sexuality, family relationships, and self-esteem" (Sheppard, et al. 1995, p. 37).

Similarly, participants whose primary disability was substance-abuse cited having a person of the same culture as the most important variable in substance-abuse settings. Having a counselor of the same culture (race) as suggested by Atkins and Wright (1980), Baker and Taylor (1995), Banks (1972), Carnes (1972), Feist-Price and Ford-Harris (1994), Gordon (1969) and Thompson and Cimbolic (1978), is an asset for the human service agency. The implications here are diversity of ideas and perceptions within the VR system. Thus, "with an insufficient number of minority counselors in the human service field, it can be hypothesized that many White counselors and administrators are making service delivery decisions that are disadvantaging ethnic minorities" (Baker & Taylor, 1995, p. 46). Is has been reported that having a person (counselor) with the same disability (spinal cord injury) was more important than a person with a similar
race or gender (Sheppard et al., 1995). Sheppard et al. (1995) reported that the participants of the focus group viewed rehabilitation service providers as perpetuating discrimination based on disability, and this bias was comparative to the general population. Additionally, participants “also view rehabilitation service providers as failing to understand the influence of culture on perceptions of disability” (p. 37).

In a related study, Asbury, Walker, Maholmes, Green, and Belgrave (1994) investigated the contribution of selected attitudinal and perceptual variables to employment concerning African Americans with disabilities. Investigated variables were: (a) self-esteem; (b) attitude towards disability; (c) attitude towards employment; (d) social support - tangible; (e) social support-emotional; (f) attitude towards seeking and receiving services; (g) perceptions of service provider climate; (h) perception of service provider capability; (i) client expectations of the rehabilitation process; and (j) client perceptions of the rehabilitation process.

“Positive attitudes towards employment, positive attitudes towards seeking and receiving rehabilitation services and high self-esteem were all significantly associated with being employed or looking for employment rather than being unemployed and not looking for employment” (Asbury, Walker, Maholmes, et al., 1994, p. 28). Asbury, Walker, Maholmes, et al. (1994) noted the most important and significant variables influencing employment status were attitude towards employment, followed by attitude towards seeking and receiving services and self-esteem. Cultural mistrust as presented by Watkins and Terrell (1988) and Alston and Bell (1996) seems to influence the attitude of engaging the VR system and subsequent task by the VR agency. Correspondingly, Bowe (1985) presented evidence that many minorities with disabilities do not fully utilize
vocational rehabilitation services and benefits that are available to them. Asbury, Walker, Maholmes, et al. (1994) concur with Bowe by stating the following: “The findings in the present study suggest an explanation for this may be related to the extent to which services are made available and the manner in which these services are offered” (p. 31).

In a study of African Americans with disabilities, Belgrave (1991) found that personality characteristics such as a high level of self-esteem and availability of social support are significantly associated with successful adjustment. The results pertaining to self-esteem and vocational/employment outcomes are consistent with what has been established in the literature connected with African Americans with disabilities (Wilson, 1988; Belgrave, 1991; Belgrave & Walker, 1991a).

Asbury, Walker, Maholmes, et al. (1994) used the Walker/Asbury Structured Interview Schedule as the instrumentation for the data. The reliability and validity coefficients were reported for each scale. Additionally, content validity was established with procedures outlined, a strength in the study. Race and cultural mistrust continue to be highly debated topics in the human service area.

In a similar study also using discriminate analysis as the test statistic, Asbury, Walker, Belgrave, Maholmes and Green (1994) investigated and measured the association among psychosocial, cultural, and accessibility factors and participation of African Americans in the rehabilitation process. Variables investigated in this national study were: (a) race/ethnicity of service providers, (b) perception of service providers’ capability, (c) attitude toward employment, and (d) perceptions of the rehabilitation process. The authors reached the following conclusions:
The results suggest that different variables may be influential for the two types of participation under investigation. In terms of current participation, the most important influence was perception of service provider capability. Clients who felt that the service provider was capable were more likely to participate in rehabilitation. (Asbury, Walker, Belgrave, et al., 1994, p.119)

The findings by Asbury, Walker, Belgrave, et al. (1994) concurred with several authors (e.g., Alston & Bell, 1996; Watkins & Terrell, 1988) that perceptions of the service providers' capability influence the participation of African Americans in the VR system. Other significant findings related to the degree to which African Americans participate in the rehabilitation system include (a) self-esteem, (b) attitude towards employment, (c) and attitude towards seeking and receiving services from the agency. No other variables were found significant in the study. Furthermore, Asbury, Walker, Belgrave, et al. (1994) discovered:

The most influential predictor of level of participation was whether the service provider was of the same race or ethnicity as the client; those clients who were of the same ethnic group as the service provider were more likely to be in the continuous (versus periodic) participation groups. (p. 119)

This article contradicted the earlier findings of Danek and Lawrence (1982) that "client-counselor racial similarity is not related to observed differences in rehabilitation success among black and white clients" (p. 57). However, it is noted that Danek and Lawrence examined selected outcome variables, while Asbury, Walker, Belgrave, et al. (1994) reported that African American consumers are more likely to participate in groups during the rehabilitation process. When they have a counselor of similar race, African
Americans are more persistent. The results of the Asbury, Walker, Belgrave, et al. (1994) study also appear to convey assertions proposed by Alston and Bell (1996) in their article, Cultural mistrust and the rehabilitation enigma for African Americans.

Several researchers have noted that African American consumers tend to disclose less with European American counselors than with African American counselors (Griffith, 1977; Ridley, 1984; Williams & Kirkland, 1971). Perhaps, these perceptions could be connected to how clients are perceived and assisted throughout the rehabilitation process. Negative perceptions from VR counselors may have a detrimental effect on the counseling relationship. Hence, successful outcomes for persons of color may be in jeopardy when moving through the VR process.

Asbury, Walker, Belgrave, et al. (1994) used a survey to gather data from VR agencies across the United States. The author used the stepwise Multiple Discriminate Analysis procedure to analyze the data obtained from a sample of one hundred and eighty-six African Americans who participated in the investigation.

Atkins (1988) described asset-oriented foundations to assist rehabilitation professionals in becoming more effective cross-cultural advocates for African Americans in the VR system. Despite the increased activities directed towards African Americans with disabilities, the state of affairs reflect a bleak predicament. Atkins appeared to link VR outcomes and racism as a primary variable in influencing successful rehabilitation for African Americans.

African Americans may have negative connotations, as one author has suggested. "Blacks are talented persons yet most of what we think we know about Blacks is NEGATIVE. Despite all the explanations that could be postulated, racism underlines
much of the negative attention focused on Blacks” (Atkins, 1988, p. 45). The perceptions of VR counselors are meaningful in the rehabilitation of African Americans regardless of how much motivation African Americans display. Agency personnel have the resources that consumers need to enhance their chances of rehabilitation.

Resources must be utilized to transform the desires of enthusiastic consumers into successful achievement (Atkins, 1988). The counselor is caught between improving the consumers’ immediate concerns and the awareness that only deeper sensitivity can eliminate the general atmosphere (Raphael, 1972) that troubles certain groups in the United States. Rehabilitation professionals must adhere to principles that promote self-worth and opportunities to compete in our society (Atkins, 1988). Her projections pertaining to an asset-based model for counselors and consumers are noteworthy of discussion.

Asset orientation. “Asset orientation reflects a belief that positive outcomes originate from shaping strengths and failure results from a concentration on limitations, fears, and negatives” (Atkins, 1988, p. 45). As noted by Atkins, fears and negative attitudes towards minorities are all too common in the United States and many societies. For example, when one refers to individuals as culturally deprived, the deficit model of thinking is in progress. It is reasonable to infer that a culturally deprived individual does not have or is not exposed to the “right culture.” The term ‘culturally deprived’ implies the existence of a superior culture. Projecting the ‘right culture’ onto minorities could interfere with VR outcomes. The ‘failure to cooperate’ closure status is a possible indication of such a projection. More African Americans are closed for ‘failure to cooperate than European Americans.
Selected assumptions. The following selected assumptions may emphasize the importance of positive counselor-consumer interactions. Atkins (1988) listed several assumptions that are present in an asset orientation to cross-cultural counseling. "The following information is reflective of the basic foundation of rehabilitation since BWD (Blacks With Disabilities) ask no more from rehabilitation than any PWD (Persons With Disabilities)" (p. 46).

1. All persons deserve freedom to choose and to accept responsibility for their choices.
2. Individuals aid us in learning about groups.
3. Different does not equate to negative, bad or evil.
4. All individuals can learn; Blacks are not an exception.
5. Risk taking is the norm rather than the exception for competent persons.
6. Focusing on one group (Blacks) does not negate the value or merit of others.
   Information learned about one target group can assist all groups.
7. Racism is a part of the fabric of American life. Racism impacts all persons in this society.
8. People create problems and people can solve problems.
9. Specific individuals and groups can only define success in the context of specific situations. Thus, success varies and is dynamic as a process and goal. The diversity of types of success is not only acceptable but also desirable.

Self-Determination. Regardless of demographics, African Americans must assume responsibility for their decisions based on their capabilities and priorities. Incumbent in this statement is the need for African Americans to select methods to achieve their own goals (Atkins, 1988).
Right to equality. "Regardless of personal characteristics, all individuals should be granted opportunities for active participation in American society" (Atkins, 1988, p. 46). This statement may address inclusion in the rehabilitation process, a principle cited and encouraged in the 1992 Amended Rehabilitation Acts. The 1978 Rehabilitation Act addressed this provision by providing independent living programs, grants for independent living centers and protection and advocacy programs for the disabled. The independent deduction from the 1978 Rehabilitation Act projects the need for minorities to take control of their lives and to enjoy the advantages that are intrinsic to the independent living concept. The independent living concept encompasses self-sufficiency and community service (Atkins, 1988).

Individual respect. A fourth human right is to be respected as an individual and not just as a minority. VR agencies must include individuals in the rehabilitation process and to ensure that individuals participate in their Individual Written Rehabilitation Plan (IWRP). Individual respect is inherent in the Constitution and in the ethics of the rehabilitation profession (Atkins, 1988).

Attitudes.

Perhaps the most powerful barrier to human rights for Blacks is majority attitudes. Majority persons tend to view minority individuals as a negative deviation from the norm resulting in labeling, stigmatizing, and negative attitudes. These negative attitudes are reflected in denial of opportunities and rights such as jobs and housing. (Atkins, 1988, p. 47)

Attitudes influence the treatment and services that African Americans receive in the vocational rehabilitation system, as well as the outcomes and acceptance into needed
programs. Denial of human services occurs when rehabilitation professionals decide based on stereotypes African American consumers are unlikely to succeed. Atkins and Wright (1980) and Atkins (1988) have found that race influences productive outcomes in African Americans with disabilities.

Atkins (1988) Recommendations/Summary

A. VR agencies must re-examine policies and procedures of the organization to specify those policies that “gatekeep” certain standards.

B. Involve power brokers at all levels of the organization, including top management. This will be vital for the success of these initiatives.

C. African Americans need to move towards rehabilitation and away from mistrust to demand what other groups with a disability expect from the VR process.

The following asset orientation is taken from Atkins (1988) which is a summary of recommendations that have appeared in past writings. Perhaps the infusion of power brokers in the employment area, introspection, community involvement (churches, extended family, etc.) and flexibility make this list of recommendations a powerful influence for change within the VR organization:

1. Blacks tend to function best within a community that entails family, extended family, significant others, and Black and White mentors.

2. Blacks need to be encouraged to be self-reliant, confident, and self-advocates.

3. An acceptance of self includes the recognition that racism operates through a double standard in America. Acceptance is equated with the knowledge that situations change. Consequently, efficacy moves consumers towards the accomplishment of goals and objectives.
4. When a double standards are applied in our society, qualification may be insufficient.

5. Patience and flexibility in asset orientation.

6. Allow Blacks to bring their culture and beliefs to the rehabilitation process.

   Consequently, the learning process can occur with rehabilitation professionals within the state-federal vocational rehabilitation. We all have something to learn from other cultures. Allowing the consumers to be themselves facilitates the natural process of encoding and decoding between the counselor and client.

7. Foster and support Blacks With Disabilities (BWD) who come to the rehabilitation with a sense of humor, and who know how to have fun. For those persons who are shy and need an extra push, encourage their growth and learning in this area.

8. Facilitate the efficient use of time, energy, and strategies with BWD. Assist them to choose their fights carefully.

9. The role of religion, spirituality, and/or belief system of BWD may require clarification by European Americans.

10. Encourage and support goal attainment by being active with BWD.

11. Never lose sight of the individual in the maze of labels and stereotypes.

12. Support the rights of BWD, including the right to take risks.

13. Black and White employees must be willing to assume a variety or roles when facilitating the growth of BWD, e.g., advocate, mentor, counselor, facilitator-observer, and consultant.

14. All aspects of the rehabilitation process must be open to change in response to areas of need.

15. Counselors need courses and practical experience in counseling BWD.
16. Techniques for utilizing successful role models and effective programs must be shared and duplicated as needed.

17. Assessment of strengths must employ a variety of tools for inclusion, not exclusion, in the rehabilitation process.

18. Competent, qualified, and educated rehabilitation professionals of diverse backgrounds must be employed at all levels in the VR system.

Supporting the assessment concepts of Atkins (1988), several authors cited vocational and aptitude testing as a vital part of the rehabilitation process for persons with disabilities (Pool, 1987; Sherman & Robinson, 1982). "Multiple opportunities for assessment bias to underestimate the work potential of the African American person with a disability may be present in the evaluation part of the first phase" (Baker & Taylor, 1995, p. 46).

The selected assumptions asserted by Atkins (1988) were particularly helpful with assisting African Americans with disabilities because of the following propositions. We must assume that African Americans with disabilities have positive attributes to bring to the rehabilitation process. That risk-taking is the norm for individuals who have a relatively high level of self-esteem, and that success can only be defined by a situation and not by classification. Thus, the self-fulfilling prophecy can be elevated to a positive level in assisting African Americans with disabilities to succeed in VR outcomes. The counselor and the consumer can experience stress when faced with situations or people that one is unaccustomed to assisting. Counselor stress may be evident in the VR process, yielding negative reactions for both counselor and consumer.
Kolk (1977) investigated counselor stress and physiological and self-reported reactions of counselors in training to five disabled consumer groups. Approximately 65% of the students participating in the study were enrolled in a rehabilitation counseling program. The following consumer groups were examined: (a) the mentally retarded, (b) amputees, (c) paraplegics, (d) the cerebrally palsied, (e) the blind, and (f) minority consumers. Significant stress accompanied all six of the consumer groups in the study. After comparing stress between the groups, results revealed that the student-counselor relationship evoked more stress towards minority groups than amputees, paraplegics, and the mentally retarded. As reported, counselors encounter various consumers, the physiology of the counselor may change.

Various groups may elicit stronger physiological stress than others (Kolk, 1977). Kolk suggested that European American counselors experience a significant amount of stress when they encounter African American consumers, would therapeutic outcomes be favorable towards African Americans? It is reasonable to expect that mistrust may occur on the part of the counselor and the consumer if negative physiological projections interfere in the therapeutic process. Interestingly, stress on the part of the majority counseling group towards minority consumers was discovered in spite of the fact that majority students verbalized that they were relatively comfortable with minority consumers. An unknown variable in the Kolk investigation was whether this discrepancy was due to the students' lack of introspection or the social desirability to report what is expected to be morally right. As observed, qualitative means of knowing can be just as controversial as the quantitative method.
Would the amount of experience a counselor possesses influence their physiological response to minority groups? Minority group participants also experienced a relatively high degree of physiological stress when presented with the minority group stimulus. However, Kolk (1977) hypothesized that pressure to assist because of a similar racial makeup may enhance the stress when African American consumers are assisted by an African American counselor or case worker in the agency. Conceivably, the African American counselor may feel additional pressure to assist because of self-projected feelings of duty to the disabled African American who comes into the agency expecting the counselor to go out of his or her way to assist because of similar racial characteristics.

Kolk’s (1977) article is relevant in attempting to shine light on several questions in the VR community. First, could the physiological responses attributed to rehabilitation counseling students impact the delivery of services to African American consumers? Given the reactionary nature of disclosing discomfort to one’s supervisor, is it possible to attribute negative physiological reactions to European American counselors, regardless of experience and level of education possessed? Subsequent studies to Kolk have implied ‘yes’ answers to the aforementioned questions. Further research is needed to determine the validity of these and other questions relative to physiological stress of the client-consumer racial makeup.

Common Themes in Literature Review

Services Received

African Americans appear to receive more of the following services when compared to European Americans: (1) business/vocational training; (2) maintenance; (3) transportation; and (4) adjustment training.
European Americans appear to receive more (1) college training; (2) restoration; and (3) on-the-job training.

Acceptance for VR services

African Americans are more likely to be determined ineligible for VR services. If accepted for VR services, African Americans are more likely to be closed for ‘failure to cooperate.’ European Americans are likely to have ‘refused service’ if determined ineligible for rehabilitation services.

Successfully Rehabilitated

African Americans are more likely not to be successfully rehabilitated compared to European Americans at closure.

Education

African Americans are more likely to have less than a high school diploma at referral. Additionally, African Americans are more likely to have been enrolled in special education programs at referral. When education is held constant, European Americans tend to have more professional and managerial positions and African Americans tend to be employed in the services industry (clerical, fast food, etc.).

European Americans tend to have more education at referral, when compared to African Americans.

Weekly Earnings at Closure and Referral

African Americans are more likely to earn significantly less at referral and closure (status 26) than European Americans. Once closed successfully, African Americans tend to be placed in non-professional vocations at a higher rate than their European American counterparts with an equivalent educational background.
Funds Spent for Case Services

When compared to European Americans with disabilities, African Americans often receive less purchased services during the VR process.

Support or Referral

African American consumers were more likely to report being supported by public assistance, whereas, European American consumers tend to report support by family and friends.

Perceptions of Counselor

African American consumers are less trusting of European American counselors than African American counselors. European American counselors are perceived as less sincere, reliable, and credible in assisting them with their problems. African and European American consumers are usually more comfortable with counselors of the same race. Consumers who perceive the provider as capable, regardless of race, are likely to participate in VR services. Finally, attitude (counselor and consumer) plays an important factor in the degree to which African Americans participate in VR services.
CHAPTER 3

METHODOLOGY

Because many societal forces impact individuals in different ways, it is recognized that the delivery of services to any culture, race, or nationality will have countless variables that affect the level and extent of vocational rehabilitation (VR) service delivery. This study seeks to investigate the differences in VR experiences between African Americans and European Americans for the federal fiscal year 1996 (FFY96).

Overall Question

Is there a difference in the vocational rehabilitation experiences of African Americans and European Americans with disabilities?

Operationally, the research questions pertaining to VR service delivery between African Americans and European Americans with disabilities were:

Question 1. Is there a difference in the number of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?
Question 2. Is there a difference in the types of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?

Question 3. Is there a difference in the acceptance rates of African Americans and European Americans (Statuses 08 and 10)?

Question 4. If found ineligible for VR services (Status 08), is there a difference between African Americans and European Americans in the reason for closure?

Question 5. Is there a difference in hourly wages and hours worked between African Americans and European Americans after successfully completing the rehabilitation process (Status 26)?

Question 6. Is there a difference in the source of support among African Americans and European Americans at referral (Statuses 00 and 02)?

Question 7. If found eligible for VR services, is there a difference between African Americans and European Americans in the reason for closure after the Individual Written Rehabilitation Plans (IWRP) were completed but whose cases were closed unsuccessfully (Status 28)?

Question 8. Is there a difference in acceptance rates based on race, education, work status at acceptance, and source of support at referral?
Explanatory Variables

Racial/Ethnic Status

A categorical variable with two levels (African American or European American). Race/ethnicity is defined as the race reported by the consumers on their application for VR services.

Race. The federal labels for race (i.e., White and Black) were modified to closely reflect current usage, which is based on a person’s geographical area of origin. Consequently, “Blacks” are defined as African Americans and “Whites” are defined as European Americans. Asian Americans and Native Americans were not used in this study because of inadequate sample sizes. No category exists for multiracial designations.

Eligibility/Accepted for VR Services (research question 8). A categorical variable with two levels (Statuses 08 and 10). Status 08 identifies consumers who are ineligible or otherwise not accepted for VR services. Status 10 identifies consumers who were accepted for VR services. In Status 10, an assessment of the consumer’s needs is completed and the Individualized Written Rehabilitation Plan (IWRP) is approved.

Work status at referral. A multichotomous variable with 9 levels: (a) competitive labor market, (b) sheltered workshop, (c) self-employed, (d) state agency managed business enterprise, (e) homemaker, (f) unpaid family worker, (g) not working-student, (h) not working-other and (i) not working-trainee or worker in non-competitive employment. Work status best defines the work activity performed by the consumer one week prior to application for VR services.
Education at referral. A multichotomous variable with three levels: (a) less than high school degree, (b) high school graduate, (c) more than high school degree. Education refers to the highest level of education completed at referral.

Originally, education is coded on the RSC 0001 form as the number of years of education completed. This variable was collapsed to measure educational levels that would approximately reflect the hierarchical nature of formal schooling. For example, numerical values between 1-11 are coded as little or no high school.

Criterion Variables

Total Number of Services

Total number of services. A metric variable with interval scaling (ranging from 1-13 services). Once a person received a service, the service was added to the total. The total number of services is defined by summing the number of services a person received, regardless of who delivered the service or when it was delivered. Thus, a person could receive from 1-13 possible services.

Types of services were defined by the RSA as (1995):

1. Diagnostic (assessment): Services required to determine eligibility or to determine the need for other services.

2. Restoration (physical and mental): Services needed “to correct or substantially modify a physical or mental condition” (RSA, 1995, p. 33), such as surgery, therapy, or treatment.

3. College/University Training: Academic schooling beyond high school.
4. Business and Vocational Training: Non-college post-secondary schooling, not offering a baccalaureate degree.

5. Adjustment Training: Training to help a person adjust to a particular work situation, such as, work hardening, mobility training, literacy training, or lip reading.

6. On-the-job Training: Training with a specific employer where the person earns wages while in training and where it is expected that, if the training is successful, the person will remain on the job or go to a similar job.

7. Miscellaneous Training: Training not identified above, such as, secondary school level academic training or training at specialized schools for persons who are deaf blind or both.

8. Counseling: Although not formally identified by the RSA, counseling was coded as a service when it was a predominate service.

9. Job Referral (Job-Finding Services): The provision of information regarding a job that allows a person to contact employers on his or her own.

10. Job Placement: Occurs when a person is referred to an employer and hired. Job placement differs from a job referral in that for job placement to occur, the person must be hired and not merely in contact with an employer.

11. Transportation: Provided to allow the client to make appointments for assessment, training, or other services.

12. Maintenance: Services provided to finance additional costs while receiving rehabilitation services.
13. Other services: Services not included elsewhere. Examples are occupational tools and equipment, initial stocks and licenses, or services to family members.

Type of Services

A categorical variable with two levels (yes or no). The type of services received (a set of 13 variables, each coded either received or not received).

Eligibility/Accepted for VR services

A categorical variable with two levels (Statuses 08 and 10). Status 08 is used to identify consumers who are ineligible or otherwise not accepted for VR services. Status 10 is used to identify consumers who were accepted for VR services. While in Status 10, an assessment of the consumer’s needs is completed and the IWRP is approved.

Reason for Closure (if ineligible for VR services: Status 08)

A multichotomous variable with 12 levels which are (a) unable to locate, (b) handicap too severe, (c) refused service, (d) death, (e) client institutionalized, (f) transfer to another agency, (g) failure to cooperate, (h) no disabling condition, (i) no vocational handicap, (j) transportation not feasible, (k) client declined order of selection on waiting list and (l) other. Status 08 is used to identify consumers who are ineligible or otherwise not accepted for VR services.

Reason for Closure (after the IWRP is approved: Status 28)

A multichotomous categorical variable with 12 levels which are (a) unable to locate, (b) handicap too severe, (c) Refused service, (d) death, (e) client institutionalized, (f) transfer to another agency, (g) failure to cooperate, (h) no disabling condition, (i.) no vocational handicap, (j) transportation not feasible, (k) client declined order of selection
waiting list and (l) other. Status 28 is used to identify consumers whose cases are closed for other reasons after the IWRP is initiated and approved.

Source of Support at Referral

Source of support at referral. A multichotomous categorical variable with 11 levels: (a) current earnings, (b) family and friends, (c) private relief agency, (d) public assistance, at least partly with federal funds (i.e., SSI and AFDC), (e) public assistance, without federal funds (general assistance only), (f) public institution - tax supported, (g) worker’s compensation, (h) social security disability insurance (SSDI), (i) all other public sources, (j) annuity or other non-disability insurance, (k) all other sources.

Weekly Earnings (at successful closure: Status 26)

A metric variable with interval scaling. Weekly earnings are calculated by hourly wages times hours worked per week. The total number of hours worked ranged between 1-79. If an individual worked more than 80 hours, a 79 was entered. Earnings ranged from $1 to $999 per hour. Consumers who earned more than $100 an hour were compared with their Dictionary of Occupational Titles (DOT) codes to examine if wage and hour data were improbable. The DOT is an occupational classification system arranged by numbers. Each number of the nine digits relates to a specific purpose in identifying a specific job category. For example, if the occupational code indicated a person was employed in a typically low paying job but the consumer was earning high hourly wages, the case was deleted from the analysis. There were no cases deleted from the subsample using this criterion.
Procedure

Sample

The sampling frame contains 62,178 consumers who were provided services by the state/federal vocational rehabilitation services in a large midwestern state. The subsample consisted of 42,574 African Americans and European Americans who were provided services during fiscal year 1996 (October 1, 1995 through September 30, 1996). The first step in the sampling process was to identify persons with no missing data on the major explanatory variable of race, and the remaining criterion variables under investigation.

The sample and subsamples were drawn from the population of consumers with no missing values on the variables under investigation. As recommended by Aldrich and Nelson (1984), the subsample for the regression analysis needed at least 50 cases per explanatory variable. Thus, the results of the regression analysis are likely to be stable.

Instrument

Data in the RSA-911 database were produced from information noted by VR counselors upon opening and closing each case. For data used in this study, the number and types of services a consumer received and weekly earnings, were completed by the counselor at successful closure (Status 26). The consumer could have received any of 1-13 services when the case was successfully closed, which are (a) diagnostics, (b) restoration, (c) college/university training, (d) business/vocational training, (e) adjustment training, (f) on-the-job training, (g) miscellaneous training, (h) counseling, (i) job referral, (j) job placement, (k) transportation, (l) maintenance, and (m) other services, not elsewhere classified (RSA, 1995).
Additionally, coding procedures of RSA-911 data conforms to federal guidelines established by RSA (1995). Since this study relied on archived data from the RSA-911 data tape, an unknown element of miscoding existed with the collection and analysis of data. To decrease coding error, the Rehabilitation Services Administration has developed 18 crosschecks (RSA, 1995). Coding error is assumed to be random and unbiased. Additionally, to decrease the possibility of coding error, descriptive statistics will be generated and the variables examined for outliers and suspicious patterns.

Data Collection Procedure

Archival data collected by the Rehabilitation Services Commission during the fiscal year 1996 was used in this study. Data on RSA-911 is recorded by all Ohio Rehabilitation field offices statewide, and entered into a central computer by clerical staff.

Analysis of Data

This study utilized the Statistical Package for the Social Sciences (SPSS) for the Personal Computer (PC). The SPSS program calculates both the descriptive and inferential statistics for the study. Descriptive statistics were generated on all investigated variables.

Research Questions

Question 1

Is there a difference in the number of services by African Americans and European Americans whose cases have been successfully closed (Statues 26)?

Variables. The Explanatory variable was race (categorical and dichotomous) and the criterion variable was number of services (metric variable ranging from 1-13).
**Sample test statistic.** The t-test was used to analyze whether there is a difference in the number of services received by African Americans and European Americans. “The t-test is a parametric statistical test used to see whether a difference between the means of two samples is significant” (Fraenkel & Wallen, 1993, p. 199). Question 1 examined the means between the number of services received by African Americans and European Americans. General assumptions associated with the t-test are (a) independent random samples and (b) group 1 and group 2 are normally distributed in the population (Hopkins, Glass, & Hopkins, 1987).

To test the degree of association between African and European Americans and number of services received, the point biserial correlation was used. The “biserial and point biserial correlation techniques [were] developed…to find the relationship between a continuous interval or ratio variable and a dichotomous nominal variable” (Ary, Lucy, Razavieh, 1990, p. 156-157). The biserial correlation coefficient ranges from -1.0 (perfect negative correlation) to + 1.0 (perfect positive correlation).

**Sampling method.** All African Americans (n=787) and European Americans (n=3,747) whose cases were closed successfully (Status 26) and received at least one service.

**Question 2**

Is there a difference in the types of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?
Variables. Explanatory variable was race (categorical and dichotomous) and the criterion variable were the 13 types of services (each a categorical and dichotomous variable).

Sample test statistic. The chi-square test of independence was the test statistic used to analyze categorical dichotomous data in question 2. "The chi-square test is based on a comparison between expected frequencies and actual, obtained frequencies. If the obtained frequencies are similar to the expected frequencies, then researchers conclude that the groups do not differ" (Fraenkel & Wallen, 1993, p. 201). Specifically, the proportions between the two dichotomous variables were investigated. The Adjusted standardize residuals (ASRESID) ($z$-scores) were used to see if cells departed from the null hypotheses of independence. Because the ASRESID is normally distributed with a mean of 0 and a standard deviation of 1, scores can be interpreted as $z$-scores. ASRESEDs of ± 2 are considered statistically significant.

In examining the association between the explanatory variable race (categorical and dichotomous) and the criterion variables of services received (categorical and dichotomous) among African and European Americans, the researcher used the phi coefficient. The phi coefficient is used when explanatory and criterion variables are categorical and dichotomous (2 x 2).

Sampling method. All African Americans ($n=878$) and European Americans ($n=4,216$) whose cases were closed successfully (Status 26) and received at least one service.
Question 3

Is there a difference in the acceptance rates of African Americans and European Americans (Status 08 or 10)?

Variables. The explanatory variable was race (dichotomous) and the criterion variable was acceptance status, also dichotomous (Status 08 & 10).

Sample test statistic. The chi-square test of independence was the test statistic used to analyze categorical dichotomous data in question 3. "The chi-square test is based on a comparison between expected frequencies and actual, obtained frequencies. If the obtained frequencies are similar to the expected frequencies, then researchers conclude that the groups do not differ" (Fraenkel & Wallen, 1993, p. 201). Specifically, the proportions between the two dichotomous variables were investigated. ASRESIDs (z-scores) were used to see if cells departed from the null hypotheses of independence. Because the ASRESID is normally distributed with a mean of 0 and a standard deviation of 1, scores can be interpreted as z-scores. ASRESEDs of ± 2 are considered statistically significant (SPSS, 1997).

In examining the association between the explanatory variable race (categorical and dichotomous) and the criterion variable acceptance rates (categorical and dichotomous) among African and European Americans, the researcher used the phi coefficient. The phi coefficient is used when explanatory and criterion variables are categorical and dichotomous (2 x 2).

Sampling method. All African Americans (n=3,852) and European Americans (n=13,124) whose cases were or were not accepted for VR services (Statuses 08 or 10).
Question 4

If found ineligible for VR services (Status 08), is there a difference between African Americans and European Americans in the reason for closure?

Variables. The explanatory variable was race (categorical and dichotomous) and the criterion variable was reason for closure (a categorical and multichotomous variable with 12 levels).

Sample test statistic. The chi-square test of independence was used to calculate the proportional differences between European Americans and African Americans in reason for closure. Because the explanatory variable (race) was categorical dichotomous and the criterion variable (reason for closure) was a categorical multichotomous variable with 12 levels, the chi-square test statistic was used to examine the null hypothesis. ASRESIDs were examined to determine which cells in the cross tabulation table adds most to the chi-square test statistic. ASRESID is a statistical criterion with a mean of 0 and a standard deviation of 1. Because the ASRESID is normally distributed, scores are interpreted as z-scores with values plus or minus 2 indicating that the column deviates significantly from zero. Positive ASRESIDs indicate that there are more consumers in that cell than would be expected under the null hypotheses of independence (SPSS, 1997).

In examining the relationship between race (categorical and dichotomous) and reason for closure (categorical and multichotomous), the researcher used Cramer’s V to examine the degree of association. Cramer’s V is used when explanatory and criterion variables are dichotomous and multichotomous and the crosstabulation table is not 2 X 2.
Sampling method. All African Americans (n=818) and European Americans (n=2,642) whose cases were closed unsuccessfully and did not have any missing value on status 08.

Question 5

Is there a difference in hourly wages and hours worked between African Americans and European Americans after successfully completing the rehabilitation process (Status 26)?

If an individual worked more than 80 hours, a 79 was entered. Earnings are coded $1 to $999 per hour. Hourly wages were compared with the occupation to see if earnings are inappropriately entered into the database. Additionally, Dictionary of Occupational Titles (DOT) codes were compared to weekly earnings to examine if wage and hour data were improbable.

Variables. The explanatory variable was race (categorical dichotomous) and the criterion variable was weekly earnings (a metric variable).

Sample test statistic. The t-test was used to analyze whether there is a mean difference in hourly wages by African Americans and European Americans who are successfully closed (Status 26). “The t-test is a parametric statistical test used to see whether a difference between the means of two samples is significant” (Fraenkel & Wallen, 1993, p. 199).

Since the explanatory variable was categorical dichotomous (race) and the criterion variable was metric (weekly earnings), the point biserial correlation was used to test the association. The “biserial and point biserial correlation techniques [were]
developed...to find the relationship between a continuous interval or ratio variable and a dichotomous nominal variable” (Ary, Lucy, Razavieh, 1990, p. 156-157). The biserial correlation coefficient ranges from -1.0 (perfect negative correlation) to + 1.0 (perfect positive correlation).

**Sampling method.** All African Americans (n=826) and European Americans (n=3,866) closed successfully (status 26) who did not have missing values on hours worked and hourly wage.

**Question 6**

Is there a difference in the source of support between African Americans and European Americans at referral (Statuses 00 & 02)?

**Variables.** The explanatory variable was race (categorical and dichotomous with two levels) and the criterion variable was source of support at referral (categorical multichotomous with 10 levels).

**Sample test statistic.** The chi-square test of independence was used to calculate the proportional differences between two categorical variables, namely race (a categorical dichotomous variable) and source of support at referral (a categorical multichotomous variable with 10 levels). Additionally, “the chi-square test is based on a comparison between expected frequencies and actual, obtained frequencies. If the obtained frequencies are similar to the expected frequencies, then researchers conclude that the groups do not differ” (Fraenkel & Wallen, 1993, p. 201). ASRESIDs were examined to determine which cells in the cross tabulation table adds most to the chi-square test statistic. ASRESID is a statistical criterion with a mean of 0 and a standard deviation of 1.
Because the ASRESID is normally distributed, scores are interpreted as $z$-scores with values plus or minus 2 indicating that the column deviates significantly from zero.

Because the explanatory variable in the study was categorical and dichotomous (race), and the criterion variable was categorical and multichotomous, Cramer's $V$ was used to test the degree of association between race and source of support. Additionally, the Cramer's $V$ is used when explanatory and criterion variables are dichotomous and multichotomous and the crosstabulation table is not $2 \times 2$. Adjusted standardized residuals were examined to determine which cells in the cross-tabulation table add most to the chi-square test statistic.

**Sampling method.** All African Americans ($n=3,138$) and European Americans ($n=10,521$) at referral (status 00 or 02) who did not have a missing value on the source of support at referral.

**Question 7**

If found eligible for VR services, is there a difference between African Americans and European Americans in the reason for closure after the IWRP was completed (Status 28)?

**Variables.** The explanatory variable was race (categorical dichotomous variable) and the criterion variable was reason for closure (categorical multichotomous variable with 12 levels)

**Sample test statistic.** The chi-square statistic was used to calculate the proportional differences between two categorical variables, race (a categorical and dichotomous variable) and reason for closure (a categorical and multichotomous variable)
with 12 levels). Only African Americans and European Americans whose cases were closed into Status 28 will be studied. The chi-square test of independence was used to calculate the proportional differences between European Americans and African Americans in reason for closure. ASRESIDs were examined to determine which cell in the cross tabulation table adds most to the chi-square test statistic. ASRESID is a statistical criterion with a mean of 0 and a standard deviation of 1. Because the ASRESID is normally distributed, scores are interpreted as $z$-scores with values plus or minus 2 indicating that the column deviates significantly from zero.

Because the explanatory variable in the study was categorical and dichotomous (race), and the criterion variable was categorical and multichotomous, Cramer's $V$ was used to test the degree of association between race and source of support. Additionally, the Cramer's $V$ is used when explanatory and criterion variables are dichotomous and multichotomous and the crosstabulation table is not 2 x 2. Adjusted standardize residuals were examined to determine which cell in the cross tabulation table add most to the chi-square test statistic. Adjusted standardize residuals (ASRESID) were examined to determine which cell in the cross tabulation table add most to the chi-square test statistic. ASRESID is a statistical criterion with a mean of 0 and a standard deviation of 1. Because the ASRESID is normally distributed, scores are interpreted as $z$-scores with values plus or minus 2 indicating the column deviates significantly from zero. Positive ASRESID$s$ indicate that there are more consumers in that cell than would be expected under the null hypotheses of independence (SPSS, 1997).
**Sampling method.** All African Americans (n=115) and European Americans (n=283) whose cases were closed status 08 who had no missing values on all variables under investigation.

**Question 8**

Is there a difference in acceptance rates based on race, education, work status at acceptance, and source of support at referral?

**Variables.** The explanatory variables were race (categorical and dichotomous), education (categorical and multichotomous with three levels), work status at acceptance (categorical and multichotomous with 9 levels) and source of support at referral (categorical and multichotomous). The criterion variable was acceptance rates (categorical and dichotomous).

**Sample test statistic.** Logistic regression will be used to investigate the likelihood of acceptance for VR services (Status 08 or 10). Logistic regression is statistical technique used to predict a dichotomous criterion variable from a set of explanatory variables (Hair, Anderson, Tatham, & Black, 1995).

Results will provide estimates of the probability of an event occurring (being accepted for VR services) and will range from 0 to 1. These estimates indicate the probability is greater than .50 the event will occur in the population (accepted for VR services). Likewise, a probability of less than .50 indicate that the event is unlikely to occur in the population (not accepted for VR services). The regression coefficient (β) is interpreted as the logarithm “odds ratio” associated with one-unit of change in the explanatory variable, but it is difficult to interpret. An odds ratio of 1.0 indicated there is

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no association between two variables. Thus, the researcher used the exponent $\text{Exp} (B)$. The higher the exponent score, the likelihood the event (being accepted for VR services) will occur.

When $b$ (regression coefficient for the explanatory variables) is positive, the value of the $\text{Exp} (B)$ is greater than 1 and the odds are increased that the event will occur. When $b$ is negative, the $\text{Exp} (B)$ will be less than 1, indicating that the odds are decreased that the event will occur. Finally, when $b$ is zero, the value of $\text{Exp} (B)$ is 1, indicating the odds are unchanged (SPSS, 1997).

**Wald statistic.** The Wald test statistic is used to determine if the probability of an event occurring is significant (being accepted for VR services). Additionally, the model chi-square test statistic is used to test the statistical null hypothesis ($H_0$: $b_{(race)} = b_{(education at referral)} = b_{(work status at referral)} = b_{(source of support at referral)} = 0$) that the logistic regression coefficients for all the terms in the model, except the constant ($b_0$) are 0. Furthermore, the model chi-square is comparable to the overall $F$ test (Hair, Anderson, Tatham, & Black, 1995). The $R$ (partial correlation) was also examined to assess the relative contribution of the explanatory variables ($b$) in predicting whether the event will occur, for example, being accepted or not for VR services (Hair et al., 1995). Note, that the $R$ statistic is analogous to the $r$ statistic in multiple regression. Additionally, the $R$ value is a partial correlation between the explanatory variables and the criterion variables, that is, it describes the contribution (correlation) of each explanatory variable in the regression equation. Small values of $R$ indicate that the explanatory variable(s) has a small partial contribution to the regression model. A positive value of $R$ indicates that as the value of the explanatory
variable increases, so does the likelihood of the event occurring. A negative value of R indicates that as the value of the explanatory variable increases, there is a decrease in the likelihood of the event occurring (ineligibility for VR services).

**Goodness of Fit.** How well does the data fit the model? One way to assess the goodness of fit is to use a classification table and a histogram of observed versus predicted probabilities. The classification table displays the predicted and observed outcomes (being accepted or not for VR services). The percentage of predicted and observed outcomes was the baseline before entering any variables in the logistic regression equation. The histogram displays the observed group and estimated probabilities for each case. Thus, goodness of fit was examined by classification table and a histogram of observed groups and predicted probabilities, in addition to the model chi-square. Key points examined regarding the classification table and histogram were: (a) the percent of correctly predicted classifications for the two groups and (b) the overall percent of correctly predicted classifications compared to the baseline predictions that all cases belong to the group where the event occurred or did not occur (Hair, Anderson, Tatham, and Black, 1995).

**Procedures for Entering Explanatory Variables**

The stepwise method of entry was chosen in this question because of its predictive nature. The stepwise procedure is designed to select from a group of explanatory variables at each step that makes the largest contribution to R (R in logistic regression is analogous to r in multiple linear regression). The stepwise method of entry is most appropriately used when: (a) the research goal is primarily predictive rather than explanatory and (b) the sample size is large and the explanatory variables are not too large.
The regression coefficient (B) and the partial correlation coefficients (R) are elaborated and displayed at each stepwise entry.

**Sampling method.** African Americans (n=2,933) and European Americans (n=9,922) who did not have missing values on the following variables: (a) education at referral; (b) work status at referral; (c) primary source of support at referral; (d) race; and (e) acceptance rate were selected for the logistic regression subsample. Being accepted or not for VR was the criterion variable in the regression model.

**Basic Assumptions**

This study assumes that the instrument used for data collection was accurate and reliable. Because this is an exposé facto study, causality cannot be inferred.

**Summary**

The methodology section has described the procedures used to conduct this study. Chapter IV will report the findings of the study as it relates to the research questions and the problem statement.
CHAPTER 4

FINDINGS

INTRODUCTION

This chapter presents the results derived after analyzing the data. The purpose of this study was to explore the relationship between consumer race and vocational rehabilitation services and outcomes through the state/federal vocational rehabilitation (VR) system. This chapter contains the results and discussion by research question.

Research Questions

Overall Question

Is there a difference in the vocational rehabilitation experiences of African Americans and European Americans with disabilities?

Question 1. Is there a difference in the number of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?

Question 2. Is there a difference in the types of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?
Question 3. Is there a difference in the acceptance rates of African Americans and European Americans (Statuses 08 and 10)?

Question 4. If found ineligible for VR services (Status 08), is there a difference between African Americans and European Americans in the reason for closure?

Question 5. Is there a difference in hourly wages and hours worked between African Americans and European Americans after successfully completing the rehabilitation process (Status 26)?

Question 6. Is there a difference in the source of support among African Americans and European Americans at referral (Statuses 00 and 02)?

Question 7. If found eligible for VR services, is there a difference between African Americans and European Americans in the reason for closure after their Individual Written Rehabilitation Plans (IWRP) were completed but whose cases were closed unsuccessfully (Status 28)?

Question 8. Is there a difference in acceptance rates based on race, education, work status at acceptance, and source of support at referral?

Descriptive Variable of Race

The sampling frame was comprised of 62,178 consumers who sought vocational rehabilitation services from a state/federal vocational rehabilitation agency in a large Midwestern state. The subsample consisted of 42,574 African Americans and European Americans who sought VR services during fiscal year 1996 (October 1, 1995 through September 30, 1996). The first step in the sampling process was to identify persons with no missing data on the major explanatory variable of race. The sample and subsamples
were drawn from the population of consumers not missing values on the variables under investigation.

**Presentation of Results**

Each section is grouped and displayed in the following sequence: (a) research question, (b) type of test statistic used to analyze the data, (c) the type of statistic used to measure the relationship between the explanatory and criterion variables, (d) the results of the analyses, and (e) discussion of results.

**Question 1**

Is there a difference in the number of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?

Table 1 presents the descriptive statistics for African Americans and European Americans and the average number of services (1-13) received by those whose cases were closed successfully (Status 26). African Americans (n=787) received an average of 5.14 services and European Americans (n=3,747) received an average of 4.70 services. The standard deviation was 1.94 for African Americans and 1.86 for European Americans, respectively. The findings are summarized in Table 1.
### n (Means and Standard Deviation) by Race

<table>
<thead>
<tr>
<th>Race</th>
<th>European Americans</th>
<th>African Americans</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>3747</td>
<td>787</td>
</tr>
<tr>
<td>M</td>
<td>4.70</td>
<td>5.14</td>
</tr>
<tr>
<td>SD</td>
<td>1.87</td>
<td>1.94</td>
</tr>
</tbody>
</table>

Note: Individuals had to receive at least one service to be included in cell count.

Table 1

**Means and Standard Deviations of European Americans and African Americans who Received Vocational Rehabilitation Services**

The t-test was used to determine if the differences in mean number of services was statistically significant for the number of VR services received between African Americans and European Americans. The point biserial correlation was used to measure the association between the explanatory and criterion variables. The Levene test results indicated that equal variances can be assumed. Thus, the pooled-variance t-test was used as the significance criterion. The t-test was statistically significant, with African Americans receiving more services than European Americans: t (df=4,532)=-5.966,
p < .000. The point biserial correlation is \( r = .088 \), which indicated a small association between race and the number of services by race received at successful closure (Status 26). The results are summarized in table 2.
<table>
<thead>
<tr>
<th>TOTAL</th>
<th>t</th>
<th>df</th>
<th>Mean Diff.</th>
<th>Std. Error Diff.</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-5.966</td>
<td>4532*</td>
<td>-0.4404</td>
<td>7.381E-02</td>
<td>-0.5851</td>
<td>-0.2957</td>
</tr>
</tbody>
</table>

Note. Equal Variance Assumed. * p < .000; r = .088

Table 2

T-test of Average Number of Services by Race (European Americans and African Americans)
Discussion. The results observed here are similar to those found by Wheaton, et al. (1996). That is, African Americans received more VR services than European Americans. Because educational and social disadvantages are shared by minorities, generally, and African Americans specifically, receiving additional services to modify existing influences of societal discrimination may be justified. Present findings are not surprising if one considers that African Americans are often more severely disabled (Marshall, 1987), underemployed, miseducated, and unemployed than any other group (Atkinson, Morten, & Sue, 1989). Perhaps, more services are needed to assist African Americans with disabilities in successful vocational and social endeavors since African Americans come to the VR system with greater perceived deficits than European Americans. It is reasonable to assume that African Americans consumers received more services because counselors were responding to the greater needs of African Americans with disabilities when they enter the VR system.

Although results indicate that African Americans tend to receive more services than European Americans, the relationship between the explanatory and criterion variables is small. Perhaps, the results support to the Rehabilitation Act of 1973, as amended in 1992, which infers that minorities (people with disabilities, African Americans, women, etc.) should be given special consideration to VR resources without prejudging or unjustly denying VR services to any prospective consumer. It is speculated that African Americans are receiving more services than European Americans because they are in greater need when they enter the VR system. Although speculative, these findings imply that counselors may be making an effort to address the service needs of African Americans with disabilities.
The results of the present study show that African Americans received more services than European Americans. Wheaton and his colleagues (Wheaton et al., 1996; Wheaton et al, in press) have observed similar patterns in other fiscal years. Wheaton et al. (1996) reported that persons who received more services tended to be more likely successfully rehabilitated. Thus, one might expect a higher success rate for African Americans. However, this issue was not looked at in this study. It may be reasonable to infer that more services equate to overall success (Status 26) in vocational rehabilitation outcomes for African Americans, an inference supported by Wheaton et al. (in press). A reasonable conclusion could be that African Americans have a greater need for VR services, and when the need is met, they are more apt to be closed successfully (Status 26). However, it should be noted that receiving more VR services alone might not make a consumer successful. In addition to receiving the most services, Wheaton et al. (in press) reported that African Americans are more likely to receive fewer services than European Americans, using a cluster analysis procedure. Meaning, African Americans primarily clustered in the cluster that received the most (cluster 1 – The comprehensive cluster) and fewest (cluster 5 – The minimalist cluster) services. Cluster 1 also had more successful closures of African Americans. The small relationship in the number of services by race might make it difficult for VR administrators to adopt practical implications to counselors in the field. Planning to provide additional services to African Americans may result in small changes in success rates because of the small association between race and the number of services received by race. Although race and number of services were found statistically significant, caution should be exercised when developing programs relative to race and number of VR services, as indicated by the association.
between the explanatory and criterion variables. Perhaps, more research directed towards holding demographics constant will shed more light on this question. In addition to holding certain demographic variables constant, qualitative methods (case file reviews) should be employed to validate if consumers are receiving services they deserve.

**Question 2**

Is there a difference in the types of services received by African Americans and European Americans whose cases have been closed successfully (Status 26)?

**Rehabilitation Services.** The method used to examine the type of VR services received by African Americans versus European Americans was the chi-square test of independence. Although services by race are presented in Table 3, an independent chi-square was run for each service by race. The phi coefficient was used to measure the association between the explanatory and criterion variables. The three most common services that African Americans received were adjustment training, transportation, and maintenance. The three most common services received by European Americans were restoration, college, and diagnosis. For European Americans, miscellaneous training, and African Americans, job referral, job placement, and other services were all minimally statistically significant. The ASRESID (z-score) was used to see if cells departed from the null hypotheses of independence. Positive ASRESIDs (z-scores) indicated the proportion of African Americans were greater than European Americans. Negative ASRESIDs (z-scores) indicated that the proportion of European Americans were greater than African Americans. Results are summarized in Table 3.
<table>
<thead>
<tr>
<th>Type of Service</th>
<th>European Americans</th>
<th></th>
<th>African Americans</th>
<th></th>
<th>ϕ</th>
<th>ASRESID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostic</td>
<td>3,438</td>
<td>(81.5)</td>
<td>658</td>
<td>(74.9)</td>
<td>-0.063</td>
<td>-4.5*</td>
</tr>
<tr>
<td>Physical &amp; Mental Restoration</td>
<td>1,367</td>
<td>(32.4)</td>
<td>188</td>
<td>(21.4)</td>
<td>-0.090</td>
<td>-6.4*</td>
</tr>
<tr>
<td>College Training</td>
<td>597</td>
<td>(14.2)</td>
<td>47</td>
<td>(5.4)</td>
<td>-0.100</td>
<td>-7.1*</td>
</tr>
<tr>
<td>Business/Vocational training</td>
<td>481</td>
<td>(11.4)</td>
<td>108</td>
<td>(12.3)</td>
<td>-0.011</td>
<td>0.8</td>
</tr>
<tr>
<td>Adjustment training</td>
<td>1,128</td>
<td>(26.8)</td>
<td>332</td>
<td>(37.8)</td>
<td>0.092</td>
<td>6.6*</td>
</tr>
<tr>
<td>On-the-job training</td>
<td>350</td>
<td>(8.3)</td>
<td>90</td>
<td>(10.3)</td>
<td>0.026</td>
<td>1.9</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1,517</td>
<td>(36.0)</td>
<td>280</td>
<td>(31.9)</td>
<td>-0.032</td>
<td>-2.3*</td>
</tr>
<tr>
<td>Counseling</td>
<td>1,944</td>
<td>(46.1)</td>
<td>386</td>
<td>(44.0)</td>
<td>-0.016</td>
<td>-1.2</td>
</tr>
<tr>
<td>Job referral</td>
<td>2,112</td>
<td>(50.1)</td>
<td>488</td>
<td>(55.6)</td>
<td>0.041</td>
<td>3.0*</td>
</tr>
<tr>
<td>Job placement</td>
<td>2,466</td>
<td>(58.5)</td>
<td>578</td>
<td>(65.8)</td>
<td>0.057</td>
<td>4.0*</td>
</tr>
<tr>
<td>Transportation</td>
<td>1,362</td>
<td>(32.3)</td>
<td>444</td>
<td>(50.6)</td>
<td>0.144</td>
<td>10.3*</td>
</tr>
<tr>
<td>Maintenance</td>
<td>571</td>
<td>(13.5)</td>
<td>266</td>
<td>(30.3)</td>
<td>0.171</td>
<td>12.2*</td>
</tr>
<tr>
<td>Other</td>
<td>1,287</td>
<td>(30.5)</td>
<td>318</td>
<td>(36.6)</td>
<td>0.046</td>
<td>3.3*</td>
</tr>
<tr>
<td>Total</td>
<td>4,216</td>
<td></td>
<td>878</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05. Note: The individual cell counts do not sum to the column total, and percentages do not sum to 100%, because a person could appear in more than one cell. Positive z-scores indicate that more African Americans received that service. Negative z-scores indicate that more European Americans received that service.

Table 3

Results of Chi-Square Tests of Rehabilitation Services Received by Race (n = 5,094)
Discussion. The top three services African Americans were likely to receive as corroborated by the present study and others are: (a) maintenance (Atkins & Wright, 1980; Wheaton et al., in press; Wheaton et al., 1996), (b) transportation (Belgrave & Walker, 1991a; Brown, 1993; Wheaton et al., 1996; Wheaton et al., in press), and (c) adjustment training (Atkins & Wright, 1980; Peterson, 1996; Spitznagel & Saxon, 1995; Wheaton et al., in press; Wheaton et al., 1996). The top three services European Americans are likely to receive as corroborated by the present study and the review of literature are: (a) diagnostic (Wheaton et al., in press), (b) college training (Atkins & Wright, 1980; Feist-Price, 1995; Peterson, 1996; Wheaton et al., in press; Wheaton et al., 1996), and (c) physical and mental restoration (Feist-Price, 1995; Wheaton et al., in press; Wheaton et al., 1996). Although not confirmed by the present study but supported by Peterson (1996) and Spitznagel and Saxon (1995) in the literature, European Americans are more likely to receive business/vocational training and on-the-job training, which is also supported by Atkins and Wright (1980) and Feist-Price (1995).

As shown by the results reported in this investigation, African Americans and European Americans tended to receive different services once accepted into the VR program. It is conceivable that African Americans tended to receive services (e.g., transportation & maintenance) that reflected their lack of resources and educational level at referral. Conversely, services that European Americans received (college training & restoration) may improve vocational earnings and potential after they exit the VR system, assuming that one's formal education influences potential earnings and
vocational placement likelihood. Improving functional abilities (e.g., surgery or therapy) and education could be viewed as services that may increase the likelihood of employment and success (Status 26) for European Americans. Because African Americans come to VR with a greater need (Atkins & Wright, 1980) and lower educational levels (Belgrave & Walker, 1991b; Bolton & Cooper, 1980), services traditionally received (transportation, maintenance, & adjustment training) may reflect societal issues prior to entering the VR system. Raising African Americans to monetary levels of European Americans once successful rehabilitated, may not be feasible. However, if types of services, closure status (Status 26), and race are associated with successful rehabilitation outcomes, the results could be valuable for VR counselors in the field in determining demographic information associated with the type of services and race. More research is needed to shed light on this question. Perhaps interviewing selected consumers could be employed as a follow-up study. Although cause and effect cannot be implied using the interview method, it may bring the field of rehabilitation closer to the “why” questions by giving a voice to the data.

Question 3

Is there a difference in the acceptance rates of African Americans and European Americans (Statuses 08 and 10)?

The method used to examine the acceptance rates among African Americans and European Americans was the chi-square test of independence. The phi coefficient was used to measure the association between the explanatory and criterion variables. There is no significant relationship between race and eligibility decision: $\chi^2 (2, n=16,976)=.135; p > .05; \text{Phi coefficient}=-.011$ (see Table 4).
<table>
<thead>
<tr>
<th></th>
<th>European Americans</th>
<th>African Americans</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Accepted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>2642</td>
<td>818</td>
<td>3,460</td>
</tr>
<tr>
<td>Column %</td>
<td>20.1</td>
<td>21.2</td>
<td>20.4</td>
</tr>
<tr>
<td>ASRESID</td>
<td>-1.5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Accepted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>10,482</td>
<td>3,034</td>
<td>13,156</td>
</tr>
<tr>
<td>Column %</td>
<td>79.9</td>
<td>78.8</td>
<td>79.6</td>
</tr>
<tr>
<td>ASRESID</td>
<td>1.5</td>
<td>-1.5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13,124</td>
<td>3,852</td>
<td>16,976</td>
</tr>
<tr>
<td>Total %</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Note. $\chi^2 (2, n=16,976)=.135; p > .05; \text{Phi coefficient}=-.011.$

Table 4

Eligibility Decision By Race
Discussion. These results are consistent with the findings reported by Wheaton (1995) that stated no statistically significant differences in acceptance rates between African Americans and European Americans with disabilities. However, the VR eligibility results found in the present study are in contrast to other research on VR eligibility, which found that African Americans (minorities) are accepted less often for VR services than European Americans (Atkins & Wright, 1980; Bowe, 1992; Dziekan & Okocha, 1993; Feist-Price, 1995; Herbert & Martinez, 1992; Walker et al, 1986). Although Atkins and Wright reported that African Americans are accepted less for VR services relative to European Americans, their results are reported in proportions and may not be statistically significant. Comparing expected percentages based on the proportion of the population, Peterson (1996) reported no difference in the acceptance rates of African Americans and European Americans. Peterson (1996) did not compare African Americans and European Americans with each other. The comparison was made relative to numbers in the population (total VR or U.S population). This was a perceived weakness of the Peterson study. Comparing expected percentages based on a particular population is like comparing apples (non-disabled) and oranges (disabled). Therefore, the results are not consistent with any of the aforementioned investigations since the explanatory variables have a different comparison group. In the present investigation, there is evidence that African Americans are not accepted less for VR services relative to European Americans. Nevertheless, the evidence regarding VR eligibility in the literature is contrary to present findings. It is reasonable to expect that more research should be focused on possible reasons for this discrepancy. Because African Americans tend to be
more severely disabled, unemployed, and have fewer resources relative to European Americans, controlling for these variables might shed more light on what affects acceptance. Additionally, using other statistical tools (e.g., logistic regression) could also provide more answers to the discrepancy of VR eligibility in the literature and the present investigation.

Question 4

If found ineligible for VR services (Status 08), is there a difference between African Americans and European Americans in the reason for closure?

The method used to examine the reason for closure for those whose cases were found ineligible for VR services among African Americans (n=818) and European Americans (n=2,642) was the chi-square test of independence. The ASRESID was used to see if cells departed from the null hypotheses of independence. Because the ASRESID is normally distributed with a mean of 0 and a standard deviation of 1, scores can be interpreted as z-scores. ASRESEDs of ±2 are considered statistically significant. Positive ASRESIDs (z-scores) indicated that the proportion of African Americans were greater than European Americans. Negative ASRESIDs (z-scores) indicated that the proportion of European Americans were greater than African Americans.

The Cramer’s $V$ was used to measure the association between the explanatory and criterion variables. There is a statistically significant relationship between race and reason for closure: $\chi^2(2, n=3,460)=92.756; p < .05; \text{Cramer’s } V = .164$. An initial crosstabulation analysis revealed that the chi-square violated one of the basic assumptions (a cell having less than an expected value of 1). Consequently, ‘transportation’ was collapsed into the ‘other’ category. Deleting transportation was not
considered because data loss would have occurred. Subsequent analysis found no assumption violations.

African Americans were more likely to be closed for the following reasons: (a) cannot locate and (b) failure to cooperate. European Americans were likely to be closed for the following reasons: (a) handicap too severe, (b) no vocational handicap, (c) refused services, and (d) other. These findings are summarized in Table 5.
<table>
<thead>
<tr>
<th>Reason for Closure</th>
<th>European Americans</th>
<th>African Americans</th>
<th>Total %</th>
<th>ASRESID</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNABLE TO LOCATE</td>
<td>140 (5.3)</td>
<td>94 (11.5)</td>
<td>6.8</td>
<td>6.2*</td>
</tr>
<tr>
<td>HANDICAP TOO SEVERE</td>
<td>119 (4.5)</td>
<td>19 (2.3)</td>
<td>4.0</td>
<td>-2.8*</td>
</tr>
<tr>
<td>REFUSED SERVICE</td>
<td>715 (27.1)</td>
<td>192 (23.5)</td>
<td>26.2</td>
<td>-2.0*</td>
</tr>
<tr>
<td>DEATH</td>
<td>10 (.4)</td>
<td>4 (.5)</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>INSTITUTIONALIZED</td>
<td>31 (1.2)</td>
<td>11 (1.3)</td>
<td>1.2</td>
<td>0.4</td>
</tr>
<tr>
<td>TRANSFERRED</td>
<td>16 (.6)</td>
<td>3 (.4)</td>
<td>0.5</td>
<td>-0.8</td>
</tr>
<tr>
<td>FAILURE TO COOPERATE</td>
<td>519 (19.6)</td>
<td>239 (29.2)</td>
<td>21.9</td>
<td>5.8*</td>
</tr>
<tr>
<td>NO DISABILITY</td>
<td>163 (6.2)</td>
<td>50 (6.1)</td>
<td>6.2</td>
<td>-0.1</td>
</tr>
<tr>
<td>NO VOC'L HANDICAP</td>
<td>246 (9.3)</td>
<td>48 (5.9)</td>
<td>8.5</td>
<td>-3.1*</td>
</tr>
<tr>
<td>OTHER</td>
<td>683 (25.9)</td>
<td>158 (19.3)</td>
<td>24.3</td>
<td>-3.8*</td>
</tr>
</tbody>
</table>

* p < .05. Note: $\chi^2$ (2 df, n = 3,460) = 92.756; p < .05; Cramer's $\hat{V} = .164$. Positive z-scores indicate that the proportion of African Americans were greater than European Americans. Negative z-scores indicate that the proportion of European Americans were greater than African Americans.

Table 5

Reason For Closure Once Determined Ineligible For Vocational Rehabilitation Services By Race
Discussion. As confirmed by the present study and corroborated by Feist-Price (1995), Atkins and Wright (1980), Denek and Lawrence (1982), and Ross and Biggi (1986), African Americans are more likely to be closed because of failure to cooperate. An individual is closed for ‘failure to cooperate’ when his/her actions convince the counselor that it is not possible to continue rehabilitation services. Failure to keep appointments for counseling and other VR services is included under this closure reason (Rehabilitation Services Administration, 1995). Perhaps, failure to cooperate is related to the lack of resources of African Americans before coming into the VR system. In contrast to European Americans, a significant number of African Americans with disabilities rely on public transportation to get to and from various VR services (Belgrave & Walker, 1991a; Brown, 1993). Wheaton et al. (1996) reported that African Americans are more likely to receive transportation. Although speculative, there may be a tendency not to rely on public transportation when the weather is ominous. Generally, public transportation may be less reliable and difficult to use in inclement weather. Secondly, being late may be a residual of cultural norms that originated from the African Continent. In the African American community, being tardy is commonly referred to as CP (Colored People) time. Some African American consumers may not perceive tardiness as negative; whereas, European American counselors may view being tardy in a negative light, resulting in failure to cooperate closure status, although speculative. Thirdly, the failure to cooperate closure status may be a passive aggressive attempt by African Americans to communicate distrust in the VR system. Moreover, it is suggested that African Americans consumers are possibly rejecting treatment options that are presented by European Americans.
counselors. There may be a tendency for African Americans and European Americans not to trust one another. Alston and Bell (1996) reported the following regarding cultural mistrust:

Cultural mistrust is one of several characteristics of African Americans with disabilities that may influence the manner in which they approach the rehabilitation system and interact with its professionals. It is important to note that cultural mistrust is not intrinsically negative. Ideally, the likelihood of rehabilitation entry and success for African American clients will be greatly enhanced by professional awareness concerning cultural mistrust and knowledge of strategies to control its effects on the rehabilitation process. (Alston & Bell, 1996, p. 19)

Lastly, in congruence with the cultural mistrust theme, African Americans may not perceive European American VR counselors as capable of serving them adequately. The perceptions of the service providers' competence may influence the participation of African Americans in the VR system (Alston & Bell, 1996; Asbury, Walker, Belgrave, et al., 1994; Watkins & Terrell, 1988). If the cultural mistrust theme is true, the ramifications for VR agencies is potentially troublesome because some researchers think the VR system is a microcosm of society (Ayers, 1969; Dodd et al., 1991; Feist-Price & Ford-Harris, 1994; Rubin et al., 1995; Sue, 1994; Thomas & Sillen, 1972; Wise, 1988).

Vocational rehabilitation counselors may want to better serve African Americans because of their (African Americans and minorities) increased need for VR services in the near future. Thus, understanding cultural concerns may assist the VR system in delivering services to African Americans. Increasing outreach services (e.g., workshops
about VR) to African Americans and other minorities is suggested by The Rehabilitation Act Amendments of 1992, and is another way to gain credibility within the minority community. Workshop topics may also counter negative perceptions (VR against African Americans) and include ways to increase positive interactions between VR and the African American consumer. Supporting the outreach concept, Mara Casper (1995) reported that 40 percent of all people with disabilities are aware of the Americans With Disabilities Act compared to only 10 percent of minorities generally. More research is needed to ascertain why differences exist among African Americans and European Americans with disabilities, relative to reasons for closure. There is evidence that African Americans and European Americans have different experiences in VR. Employing survey and focus group methodology could provide valuable answers to closure discrepancies. After employing survey and/or focus methodology, it would be interesting to compare how consistent the results are with one another (quantitative vs. qualitative).
Question 5

Is there a difference in hourly wages and hours worked between African Americans and European Americans after successfully completing the rehabilitation process (Status 26)?

The t-test was used to examine mean hourly earnings after successfully completing the rehabilitation. Consumers who earned more than $100 an hour were compared with their Dictionary of Occupational Titles (DOT) codes to examine if wage and hour data were improbable. A consumer could work no more than 80 hours and earn no more than $999 per hour, as determined by the Rehabilitation Services Administration (1995). There were no cases deleted from the subsample. The point biserial correlation was used to measure the association between the explanatory and criterion variables. A t-test was performed to determine if there was a difference in earnings and hours worked at closure among African Americans and European Americans whose cases had been successfully closed (Status 26).

The Levene test indicated that the variances were not equal for both earnings at closure (significance F=51.449; p < .05) and hours worked at closure (significance F=7.048; p < .05). Thus, the separate-variance t-test was used. The t-tests revealed statistical significance between the races on earnings at closure (t=6.404; p < .05); however, hours worked at closure were not found to be statistically significant (t=6.404; p > .05). The average number of hours worked at closure between African Americans and European Americans was 28.9 and the average hourly wage at closure between African Americans and European Americans was $6.25. The correlation between hourly wages and hours worked (r=.25; p < .001) was also statistically significant. African Americans
and European Americans earned $6.14 and $6.89 per hour respectively at closure. The point biserial correlations for average weekly hours worked ($r=-.014$) and hourly wage at closure ($r=-.070$) also displayed a small association by race. The following correlations were statistically significant at the .05 level. The descriptive statistics are summarized in Table 6 and the t-test by hourly wages and hours worked at successful closure (Status 26) are summarized in Table 7.

<table>
<thead>
<tr>
<th></th>
<th>European Americans</th>
<th>African Americans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At Closure *</td>
<td>$n$</td>
<td>3866</td>
</tr>
<tr>
<td></td>
<td>$M$</td>
<td>6.89</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>4.33</td>
</tr>
<tr>
<td></td>
<td>$n$</td>
<td>826</td>
</tr>
<tr>
<td></td>
<td>$M$</td>
<td>6.14</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>2.71</td>
</tr>
</tbody>
</table>

|                  |                    |                   |
| **Hours Worked** |                    |                   |
| At Closure *     | $n$                | 3866              |
|                  | $M$                | 30.65             |
|                  | $SD$               | 10.92             |
|                  | $n$                | 826               |
|                  | $M$                | 30.45             |
|                  | $SD$               | 10.19             |

Table 6

**Means And Standard Deviations Of Hourly Wages and Hours Worked At Closure By Race**
<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Mean Diff.</th>
<th>95% C. I. Lower</th>
<th>95% C. I. Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wages At Closure *</td>
<td>6.404**</td>
<td>1852.265</td>
<td>0.75</td>
<td>0.52</td>
<td>0.98</td>
</tr>
<tr>
<td>Hours Worked At Closure *</td>
<td>0.499</td>
<td>1263.656</td>
<td>0.20</td>
<td>-0.58</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Note. * Equal variance not assumed. ** p < .001, r = .25.

Table 7

T-test Results of Hourly Wages And Hours Worked at Closure By Race
Discussion. As confirmed by the present study and corroborated by others (Atkins & Wright, 1980; Feist-Price, 1995; Wise, 1988), African Americans earned less than European Americans after successfully completing the rehabilitation process. Small measures of association between race and hourly wages may indicate that programmatic planning to increase earning by race may show only marginal change.

It is possible that African Americans earn significantly less after successfully completing the rehabilitation process because of less formal education at referral, fewer resources at referral, racial discrimination in the United States, or all three. Albeit speculative, there may be a positive relationship between formal education, money earned at closure, and the type of vocation one is qualified for once the VR process is successfully completed. It is reasonable to anticipate that African Americans entering the VR system with less formal education and resources would not achieve (monetarily) as much as their European American counterparts after the VR process. The writer speculates that African Americans with disabilities are more likely to defer plans for college because of the lack of available resources. To some extent, it could be hypothesized that African Americans are placed in lower paying vocations because of lower levels of formal education and resources at referral and at successful closure (Status 26), relative to their European American counterparts, although this was not studied in the present investigation. Fessler (1994) reported that when education is held constant at referral, African Americans were likely to earn far less than European Americans with disabilities. Assuming that the VR system is a microcosm of society as suggested by several authors (Ayers, 1969; Feist-Price & Ford-Harris, 1994; Rubin et al.,
African Americans earning less when education is held constant may not be surprising. It is presumed that many discrepancies in earnings by African Americans and European Americans are influenced by forces outside the realm of VR. Educating potential VR employers about consumers with disabilities, may serve as a catalyst to increase opportunities for all people with disabilities. Moreover, educating employers about consumers with disabilities, and specifically African Americans, may improve perceptions of competence within the VR system and among European Americans, generally. Employers may underestimate the abilities of people with disabilities and underestimate African Americans with disabilities even more. Workshops and in-service trainings may assist employers in understanding the abilities and limitations of people with disabilities. It is hoped that an enhanced understanding among employers may lead to increase opportunities for all people with disabilities, generally, and African Americans, specifically.

Question 6

Is there a difference in the source of support among African Americans and European Americans at referral (Statuses 00 and 02)?

The method used to examine the source of support among African Americans and European Americans was the chi-square test of independence. The ASRESID was used to see if cells departed from the null hypotheses of independence. Positive ASRESID (z-scores) indicated that the proportion of African Americans were greater than European Americans. Negative ASRESID(s) indicated that the proportion of European Americans
were greater than African Americans. Cramer’s $\chi^2$ was used to measure the association between the explanatory and criterion variables.

There was a statistically significant difference between race and primary support at application or referral: $\chi^2 (2, n=13,659)=323.939; p < .05$; Cramer’s $\phi=.154$. African Americans were more likely to have received public assistance, and European Americans were likely to be living from earnings, family or friends, or workers’ compensation.

Table 8 presents primary sources of support for African Americans and European Americans at the time of application.
<table>
<thead>
<tr>
<th>European Americans</th>
<th>African Americans</th>
<th>n (Column %)</th>
<th>n (Column %)</th>
<th>Total %</th>
<th>ASRESID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td></td>
<td>1,191 (11.3)</td>
<td>232 (7.4)</td>
<td>10.4</td>
<td>-6.3*</td>
</tr>
<tr>
<td>FAM or Friends</td>
<td></td>
<td>3,784 (36.0)</td>
<td>836 (26.6)</td>
<td>33.8</td>
<td>-9.7*</td>
</tr>
<tr>
<td>Pub. Asst.</td>
<td></td>
<td>3,022 (28.7)</td>
<td>1,419 (45.2)</td>
<td>32.5</td>
<td>17.3*</td>
</tr>
<tr>
<td>WC</td>
<td></td>
<td>269 (2.6)</td>
<td>38 (1.2)</td>
<td>2.2</td>
<td>-4.5*</td>
</tr>
<tr>
<td>SSDI</td>
<td></td>
<td>1,775 (16.9)</td>
<td>486 (15.5)</td>
<td>16.6</td>
<td>-1.8</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>480 (4.6)</td>
<td>127 (4.0)</td>
<td>4.4</td>
<td>-1.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10,521 (100)</td>
<td>3,138 (100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. $\chi^2 (2, n = 13,659) = 323.939; p < .05$; Cramer’s $V = .154$. * $p < .05$. Positive $z$-scores indicate that the proportion of African Americans were greater than European Americans. Negative $z$-scores indicate that the proportion of European Americans were greater than African Americans.

Table 8

Primary Source of Support At Referral for Vocational Rehabilitation Services By Race
Discussion. As validated by the present study, European Americans were more likely to be supported by earnings, family and friends, or worker’s compensation at referral; whereas, African Americans were more likely to be supported by public assistance. In contrast to the present findings, Atkins and Wright (1980) reported family and friends provided the largest percentage of assistance for both races, and such support was the second most common source for African Americans.

As surmised in question 1, African Americans tended to receive services that reflected their lack of resources and educational level at referral (transportation & maintenance). Therefore, relying on public assistance at referral seems consistent for this population of VR consumers. In contrast, European Americans tended to receive services that reflected more money and potential resources at referral. Simply stated, European Americans may not rely as much on VR assistance (monetary) for basic needs because earnings and resources at referral may be greater relative to those of African Americans with disabilities. The greater proportion of European Americans who reported funds from worker’s compensation at referral indicate that European Americans had previous employment prior to application. Because African Americans appear in greater need of financial assistance at referral, maintenance services when appropriate, may result in greater vocational success. However, caution is warranted if increasing services are considered because of the low association between race and primary support at referral. More research is needed in this area.

Question 7

If found eligible for VR services, is there a difference between African Americans and European Americans in the reason for closure after their Individual Written
Rehabilitation Plans (IWRP) were completed but whose cases were closed unsuccessfully (Status 28)?

The sample consisted of African Americans ($n=115$) and European Americans ($n=283$). The chi-square test of independence was used as the test statistic. The ASRESID was used to see if cells departed from the null hypothesis of independence. The Cramer’s $V$ was used to measure the association between the explanatory and criterion variables. An initial crosstabulation analysis revealed that the chi-square violated one of the basic assumptions (a cell having less than an expected value of 1). Consequently, insuring that the crosstabulation table met the basic assumption of having at least one count per cell, ‘transportation’ and ‘death’ were collapsed into the ‘other’ category. Subsequent analysis found no assumption violations.

Race and reason for closure after the completion of the IWRP was statistically significant: $\chi^2 (2, n=398)=11.087; p < .05$; Cramer’s $V=.167$. Failure to cooperate (African Americans) and other (European Americans) were the only cells found statistically significant in the crosstabulation table. Table 9 presents reasons for closure for African Americans and European Americans after the IWRP was completed (Status 28).
<table>
<thead>
<tr>
<th>Reason</th>
<th>European Americans</th>
<th>African Americans</th>
<th>Total %</th>
<th>ASRESID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot Locate</td>
<td>20 (7.1)</td>
<td>13 (11.3)</td>
<td>8.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Handicap Too Severe</td>
<td>16 (5.7)</td>
<td>4 (3.5)</td>
<td>5.0</td>
<td>-0.9</td>
</tr>
<tr>
<td>Refused Service</td>
<td>104 (36.7)</td>
<td>37 (32.2)</td>
<td>35.4</td>
<td>-0.9</td>
</tr>
<tr>
<td>Institutionalized</td>
<td>7 (2.5)</td>
<td>2 (1.7)</td>
<td>2.3</td>
<td>-0.4</td>
</tr>
<tr>
<td>Failure to Cooperate</td>
<td>73 (25.8)</td>
<td>44 (38.3)</td>
<td>29.4</td>
<td>2.5*</td>
</tr>
<tr>
<td>Other</td>
<td>63 (22.3)</td>
<td>15 (13)</td>
<td>19.6</td>
<td>-2.1*</td>
</tr>
<tr>
<td>Total</td>
<td>283 (100)</td>
<td>115 (100)</td>
<td>(100)</td>
<td></td>
</tr>
</tbody>
</table>

* *p < .05. Note. $\chi^2 (2, n = 398) = 11.087; p < .05; Cramer’s $V = .167$. Positive z-scores indicate that the proportion of African Americans were greater than European Americans. Negative z-scores indicate that the proportion of European Americans were greater than African Americans.

Table 9

Reason For Unsuccessful Closure After Found eligible (Status 28) After the Completion of the Individual Written Rehabilitation Plan By Race
Discussion. In contrast to the present investigation, Herbert and Martinez (1992) reported no difference in unsuccessful closure statuses (Statues 08, 28, & 30) among African Americans and European Americans. However, Herbert and Martinez did find a statistical difference in successful rehabilitation (Status 26), across all four closure statues (Statues 08, 26, 28, & 30). Interestingly, African Americans were also more likely to be closed for ‘Failure to cooperate’ when found ineligible for VR services, as reported in question four. What appears to be evident is that African Americans experience different reasons for closure than European Americans if accepted or not accepted for VR services; however, explanations for this discrepancy are unclear. Feist-Price (1995) reported that significant proportions of African Americans compared with European Americans were closed for reasons other than being successfully rehabilitated (Status 26).

Various inferences for understanding consumer outcomes are noted by Herbert and Martinez (1992): (a) consumer’s culture may be misunderstood by the counselor; (b) assessment phase may indicate values that are opposite from societal norm; (c) the counselor may ignore the consumer’s experiences during the counseling session, or (d) all of the above. In order to assist consumers who possess different racial and ethnic backgrounds, vocational rehabilitation providers must be open to new ways of assessing potentially biased attitudes within themselves. Thus, one will encounter more understanding of consumers from diverse backgrounds that will optimistically improve the experiences of African Americans and people of color in the VR system.

Question 8

Is there a difference in acceptance rates based on race, education, work status at acceptance and source of support at referral?
The method used to examine the acceptance rate among African Americans and European Americans was logistic regression. The stepwise method of entry was chosen in this question because of its iterative nature. The stepwise method of entering started with selecting the best predictor variable. Additionally, the stepwise procedure was designed to select from a group of explanatory variables at each step that makes the largest contribution to R (R in logistic regression is analogous to R in multiple linear regression). The stepwise method of entry is most appropriately used when: (a) the research goal is primarily predictive rather than explanatory and (b) the sample size is large and the number of explanatory variables are not too large (1/40) (Hair et al., 1995). The alpha level chosen for the stepwise entry was .05.

African Americans (n=2,933) and European Americans (n =9,922) who did not have missing values on the following variables: (a) education at referral; (b) work status at referral; (c) primary source of support at referral; (d) race; and (e) acceptance rate were selected for the logistic regression subsample. Being accepted or not for VR was the criterion variable in the regression model.

At each entry, the increased variance was compared to the prior explanatory variable entered. The regression coefficient (b) and the partial correlation coefficients (R) are elaborated and displayed at each entry. All classifications were measured relative to the 91.96 % baseline of VR.

Summary of Logistic Regression Results

Primary support at referral was added first to the logistic regression equation and was found statistically significant. The overall prediction rate did not change from the baseline of 91.96 percent. Not only was the category (primary support at referral)
significant, but the 'earnings' level was as well. Given the observed number of VR consumers in the subsample, the goodness-of-fit test displayed the observed and expected numbers of accepted and non-accepted VR consumers. Observed and expected numbers of the goodness-of-fit statistic indicated the model fit the data. The partial correlation coefficient (R) indicated that the category of primary support at referral accounted for 5% of the variance explained in the criterion variable of VR eligibility. The 'earnings' level under the primary support at referral was negatively correlated with the criterion variable of VR eligibility (R=-.026). The total regression model explained very little variance in acceptance (Nagelkerke statistic is .002: explaining the total variance in the model). Note: The Nagelkerke is analogous to R² in multiple linear regression. The confidence interval indicated that earnings may be a predictor of VR acceptance, and the higher one's earnings, the less likely one is to be accepted for VR services.

Albeit statistically significant in the regression, race was not reported because the residual chi-square (residual chi-square analogous to overall F test) was not significant. Including race in the regression model is analogous to employing a post hoc procedure when the overall F test is not significant using the ANOVA. Additionally, SPSS (1997) recommends terminating variable selection if the residual chi-square cannot be rejected. If modeling building continues when the residual chi-square is not significant, the "resulting model will not be useful for other samples from the same population" (SPSS, 1997, p. 55). The logistic regression summary is presented in Tables 10 and 11.
## Logistic Regression: Predicting Acceptance for VR Services

(n=1,032)

<table>
<thead>
<tr>
<th>Variable</th>
<th>b</th>
<th>Wald</th>
<th>Sig.</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Support at Ref.</td>
<td></td>
<td>32.56</td>
<td>.00</td>
<td>0.0560</td>
</tr>
<tr>
<td>Earnings</td>
<td>-.4861</td>
<td>7.49</td>
<td>.00</td>
<td>-.0276</td>
</tr>
<tr>
<td>Family or Friends</td>
<td>-.2108</td>
<td>1.61</td>
<td>.20</td>
<td>0.0000</td>
</tr>
<tr>
<td>Public Assistance</td>
<td>-.0780</td>
<td>0.21</td>
<td>.64</td>
<td>0.0000</td>
</tr>
<tr>
<td>WC</td>
<td>-.4506</td>
<td>3.60</td>
<td>.05</td>
<td>-0.0149</td>
</tr>
<tr>
<td>SSDI</td>
<td>.1484</td>
<td>0.67</td>
<td>.41</td>
<td>0.0000</td>
</tr>
<tr>
<td>Constant</td>
<td>2.2064</td>
<td>216.93</td>
<td>.00</td>
<td></td>
</tr>
</tbody>
</table>

Model Chi-square=35.236; df 6, p=< .000.

Table 10

**Summary of Logistic Regression Coefficients**
<table>
<thead>
<tr>
<th>Variables</th>
<th>Exp(B)</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Support at Referral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earnings</td>
<td>.6150</td>
<td>.4343</td>
<td>.8709</td>
</tr>
<tr>
<td>Family or Friends</td>
<td>.8099</td>
<td>.5853</td>
<td>1.1208</td>
</tr>
<tr>
<td>Public Assistance</td>
<td>.9250</td>
<td>.6661</td>
<td>1.2844</td>
</tr>
<tr>
<td>WC</td>
<td>.6373</td>
<td>.4001</td>
<td>1.0149</td>
</tr>
<tr>
<td>SSDI</td>
<td>1.1600</td>
<td>.8136</td>
<td>1.6539</td>
</tr>
</tbody>
</table>

Note. The last variable in each group is the reference variable.

Table 11
Confidence Interval for Exp (B)

Discussion. Primary source of support was entered and found statistically significant in the regression model, using the stepwise method of entry. As earnings increased there was evidence that acceptance into VR decrease (holding all variables constant), as indicated by the negative partial correlation coefficient ($R = -.026$). It is reasonable to expect that the more resources one has at referral (earnings), the possibility of acceptance will decrease. Because the goodness-fit statistic was high, the results should be interpreted with caution. The goodness-of-fit statistic could be high because of the large number of consumers with no missing data on the variables under investigation who were accepted for VR services. Consequently, there may have been an over fitting (sensitivity) between the number of variables in the sample and the large sample size.
After the group variable 'primary source of support' at referral was entered, the residual chi-square was not found statistically significant. The stepwise method, however, still entered race into the model. It is speculated that the large sample size detected trivial affects of race in the regression equation. In the final analysis, race was not displayed in Tables 10 or 11 because SPSS (1997) recommends terminating variable selection if the residual chi-square cannot be rejected.

Although results indicated that the group variable of 'primary source of support' was statistically significant, the small amount of variance accounted for in the criterion variable (VR acceptance) was small. Thus, results should be interpreted with caution and discretion. The logistic regression summary is presented in Tables 10 and 11.

Summary

This study addressed eight questions:

**Question 1**

Is there a difference in the number of services African Americans and European Americans received whose cases have been successfully closed (Status 26)?

African Americans (5.14) received more VR services than European Americans (4.70) at successful closure (Status 26). The relationship between race and the number of services received is small but statistically significant.

**Question 2**

Is there a difference in the types of services African Americans and European Americans received whose cases have been successfully closed (Status 26)?

Race and the type of services received are not independent, as shown by the chi-square test statistic. The three most common services that African Americans received
were adjustment training, transportation, and maintenance. The three most common
services received by European Americans were restoration, college, and diagnosis. When
examining the relationship between the criterion and explanatory variables, there were
small relationships between race, transportation (phi coefficient = .144) and maintenance
(phi coefficient = .171).

Question 3

Is there a difference in the acceptance rates of African Americans and European
Americans (Status 08 or 10)?

Race and the eligibility decision were found to be independent from one another.
Consequently, the relationship between the criterion and explanatory variables was small.

Question 4. If found ineligible for VR services (Status 08), is there a difference
between African Americans and European Americans in the reason for closure?

Race and reason for closure, if found ineligible for VR services were not
independent of each other. African Americans were more and likely to be closed (a)
cannot locate and (b) failure to cooperate. European Americans are likely to be closed (a)
handicap too severe, (b) no vocational handicap, and (c) other. Race and reason for
closure were slightly associated (Cramer’s V = .164).

Question 5

Is there a difference in hourly wages and hours worked between African
Americans and European Americans after successfully completing the rehabilitation
process (Status 26)?

There is a statistically significant difference between African Americans and
European Americans on earnings after successfully completing the rehabilitation process;
however, hours worked at close was not statistically significant. Race and average weekly
hours ($r=.014$) and wages ($r=.070$) were slightly associated and statistically significant.

**Question 6**

Is there a difference in the source of support among African Americans and
European Americans at referral (Statuses 00 & 02)?

Primary source of support among African Americans and European Americans at
referral/acceptance (Status 00 and 02) are not independent. Race and primary source of
support a referral/acceptance were slightly associated. African Americans more likely to
report public assistance at referral; whereas, and European Americans were likely to
report support from earnings, family or friends, and workers' compensation.

**Question 7**

If found eligible for VR services, is there a difference between African
Americans and European Americans in the reason for closure after their Individual
Written Rehabilitation Plans (IWRP) were completed but whose cases were closed
unsuccesfully (Status 28)?

When found ineligible for VR services after the IWRP, race was not independent
of reason for closure (the null hypothesis of independence was rejected). Race and reason
for closure was slightly associated. African Americans and European Americans are
more likely to be closed 'Failure to cooperate,' and 'other' respectively.

**Question 8**

Is there a difference in acceptance rates based on race, education, work status at
acceptance, and source of support at referral?
Primary support at referral was found statistically significant in the regression equation. After the stepwise procedure selected the variables for entry, the regression model explained little total variance in VR acceptance. Additionally, the group variable 'primary support at referral' explained a small amount of variance in the criterion variable of VR acceptance.
CHAPTER 5

SUMMARY AND RECOMMENDATIONS

Chapter five contains the following two sections: (1) summary of the study and (2) recommendations for future research.

The purpose of this study was to explore the relationship between consumer race and vocational rehabilitation services and outcomes as observed in the state/federal vocational rehabilitation (VR) system. The general question that this research sought to answer was: Is there a difference in the vocational rehabilitation experiences of African Americans and European Americans with disabilities? In order to arrive at an accurate assessment, the study sought to answer the following questions related to VR services and consumer race:

1. Is there a difference in the number of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?
2. Is there a difference in the types of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?
3. Is there a difference in the acceptance rates of African Americans and European Americans (Statuses 08 and 10)?

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4. If found ineligible for VR services (Status 08), is there a difference between African Americans and European Americans in the reason for closure?

5. Is there a difference in hourly wages and hours worked between African Americans and European Americans after successfully completing the rehabilitation process (Status 26)?

6. Is there a difference in the source of support among African Americans and European Americans at referral (Statuses 00 and 02)?

7. If found eligible for VR services, is there a difference between African Americans and European Americans in the reason for closure after the Individual Written Rehabilitation Plans (IWRP) were completed but whose cases were closed unsuccessfully (Status 28)?

8. Is there a difference in acceptance rates based on race, education, work status at acceptance, and source of support at referral?

Summary

The sampling frame in the investigation consisted of 62,178 consumers who were provided services by the state/federal vocational rehabilitation services in a large Midwestern state during fiscal year 1996 (October 1, 1995 through September 30, 1996). Consumers who did not have missing data on the major explanatory variable of race and explanatory variables in each particular research question were identified. In the following pages, the results of this investigation will be generalized question by question for African Americans and European Americans who received services from the Ohio federal/state vocational rehabilitation system.
Summary by Research Question

**Question 1.** Is there a difference in the number of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?

The t-test and point biserial were used to ascertain the number of services and the association between the explanatory and criterion variables respectively. African Americans (n = 787) received an average of 5.14 services and European Americans (n = 3,747) received an average of 4.70 services, which was statistically significant. Thus, the null hypothesis was rejected. The point biserial correlation indicates a small association between race and the number of services by race received at successful closure (Status 26), pointing to possible a correlation between race and number of services received or not received.

**Question 2.** Is there a difference in the types of services received by African Americans and European Americans whose cases have been successfully closed (Status 26)?

The chi-square and phi coefficient were used to ascertain the types of services and the association between the explanatory and criterion variables respectively. For many services, race and type of services were not independent. The three services most commonly received by African Americans (n = 878) were adjustment training, transportation, and maintenance. The three services most commonly received by European Americans (n = 4,216) were restoration, college, and diagnosis. The categories of services received such as job referral, job placement and other, were statistically
significant for African Americans and miscellaneous for European Americans. The races did not differ on Business/vocational training, counseling, and on-the-job training.

**Question 3.** Is there a difference in the acceptance rates of African Americans and European Americans (Status 08 or 10).

The chi-square and phi coefficient were used to ascertain the acceptance rates and the association between the explanatory and criterion variables respectively. The eligibility decision (accepted or not) was compared among African Americans (n = 3,852) and European Americans (n = 13,124) with no relationship between race and eligibility decision indicated. Race was found independent of acceptance into VR. Consequently, the null hypothesis was not rejected. The phi coefficient indicated a small relationship between the explanatory and criterion variables.

**Question 4.** If found ineligible for VR services (Status 08), is there a difference between African Americans and European Americans in the reason for closure?

The chi-square and Cramer's $\chi^2$ were used to ascertain the reason for closure and the association between the explanatory and criterion variables respectively. Race (African Americans, n = 818 and European Americans, n = 2,642) and reason for closure, if found ineligible for VR services (Status 08), were dependent. Race and reason for closure were minimally associated (Cramer’s $\chi^2 = 16$). If found ineligible for VR services, African Americans were more likely to be closed for the following reasons: (a) cannot locate, (b) failure to cooperate. European Americans were likely to be closed for the following reasons: (a) handicap too severe, (b) no vocational handicap, (c) refused services, or (c) other. Death, institutionalized, transferred, and no disability, were all not found statistically significant in the present investigation.
Question 5. Is there a difference in hourly wages and hours worked between African Americans and European Americans after successfully completing the rehabilitation process (Status 26)?

The t-test and point biserial were used to ascertain hourly wages and hours worked and the association between the explanatory and criterion variables respectively. There is a statistically significance difference between African Americans (n = 826) and European Americans (n = 3,866) in earnings at closure (t = 6.404; p < .05); however, hours worked at closure (t = 0.499; p > .05) was not found to be statistically significant. The average amount of hours worked at closure between African Americans and European Americans is 28.9 and the hourly wage at closure between African Americans and European Americans is $6.25. African Americans and European Americans earned $6.14 and $6.89 an hour at closure, respectively. There is a moderate association between earnings and hours worked at closure.

Question 6. Is there a difference in the source of support among African Americans and European Americans at referral (Statuses 00 & 02)?

The chi-square and Cramer’s V were used to ascertain differences in source of support at referral and the association between the explanatory and criterion variables respectively. Primary source of support among African Americans (n = 3,138) and European Americans (n = 10,521) at referral/acceptance (Status 00 and 02) were found dependent. Consequently, the null hypothesis was rejected. Race and ‘primary source of support’ at referral were minimally associated (Cramer’s V = .15). African Americans had a statistically significant number of individuals appear in the public assistance category. European Americans had a statistically significant number of individuals

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appear in the earnings, family or friends, and workers’ compensation categories. The ‘Public assistance’ and ‘family or friends’ categories highly departed from the chi-square null hypothesis of independence for African Americans and European Americans, respectively.

**Question 7.** If found eligible for VR services, is there a difference between African Americans and European Americans in the reason for closure after the Individual Written Rehabilitation Plans (IWRP) were completed but whose cases were closed unsuccessfully (Status 28)?

The chi-square and Cramer’s $V$ were used to ascertain the reason for closure if found eligible for VR services and the association between the explanatory and criterion variables respectively. When found eligible for VR services after the IWRP was written (Status 28) but closed unsuccessfully, race (African Americans, $n = 115$ & European Americans, $n = 283$) and reason for closure were dependent. Race and reason for closure after the completion of the IWRP (Status 28) were minimally associated (Cramer’s $V = 17$). ‘Failure to cooperate’ (African Americans) and ‘other’ (European Americans) were the only two cells found statistically significant.

**Question 8.** Is there a difference in acceptance rates based on race, education, work status at acceptance, and source of support at referral?

Logistic regression was used to ascertain whether race, education at referral, work status at referral, and primary source of support at referral influence acceptance into VR. African Americans ($n = 2,933$) and European Americans ($n = 9,922$) who did not have missing values on the following variables: (a) education at referral; (b) work status at referral; (c) primary source of support at referral; (d) race; and (e) acceptance rate were
selected for the logistic regression subsample. Being accepted or not for VR services was the criterion variable in the present model. The stepwise method of entry was chosen because of its iterative nature. Additionally, the stepwise method of entering variables for inclusion in the regression model started with selecting the best predictor variable for entry.

The group variable ‘primary source of support’ was selected (stepwise procedure) and found statistically significant in the regression model. As earnings increased there was evidence that acceptance into VR decreased, holding all other variables constant. The stepwise procedure did not select any of the remaining explanatory variables for inclusion into the regression model.

Directions for Future Research

With a higher rate of disability, being more prone to experience a disability (Walker et al., 1992), unemployment, underemployment, and miseducation than European Americans (Atkinson, Morten, & Sue, 1989), demographic information suggests that African Americans are going to increase their need for VR services in near the future. The projected demographic shifts within the United States reveal that today’s minority population will comprise approximately one-third of the total U.S. population (U.S. Bureau of the Census, 1989). Moreover, African Americans comprise 12% of the U.S. population and 15% of the incidence of disability (Walker, 1988). There is evidence to suggest that African Americans are more severely disabled than European Americans in the United States (Marshall, 1987). In order to serve this population more effectively, research in the following areas may enhance understanding and utilization of services among African and European Americans with disabilities:
1. Why African Americans, specifically, and minorities, generally, tend to be found ineligible for VR services at a higher rate when compared to European Americans (although not found the present investigation but common in the literature).

2. Why European Americans earn more than African Americans at closure, consistently, even when controlling for certain demographic variables.

3. What are most VR agencies doing to ensure the participation of more African Americans with disabilities? What types of outreach programs are prevalent?

4. Why are African Americans more likely to be closed failure to cooperate at Statuses 08 and 28.

Finally, it is recommended that this study be replicated from similar 911 data employing the federal/state vocational rehabilitation system. Attention should be directed towards holding certain variables constant (e.g., education and primary support at referral) to control extraneous variance in results. Perhaps, utilizing multivariate techniques will assist to this end. Additionally, more qualitative studies should be implemented as part of the overall plan of seeking optimal outcomes for African Americans and all persons with disabilities in the United States. Thus, knowing what works can assist VR agencies in programming outreach services for underrepresented and underserved populations. As indicated by the present study, outcomes that are suitable for both African and European Americans with disabilities continue to have different experiences in the VR system.
References


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