EXPLORING VOCATIONAL REHABILITATION OUTCOMES OF AFRICAN AMERICANS WITH EMOTIONAL AND BEHAVIORAL DISABILITIES: A NATIONAL INVESTIGATION

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

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* * * * *
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ABSTRACT

The purpose of this study was to explore the relationship between African American consumers with a primary mental health (emotional and behavioral) disability and vocational rehabilitation outcomes through the vocational rehabilitation (VR) system in the United States. The participants in this study were all consumers who sought public VR services nationally for the fiscal year 2002 (October 1, 2001 to September 30, 2002). The sampling frame in the investigation consisted of 1,600 VR consumers. The results from the MANCOVA indicated there was a significant relationship between race (African Americans and Hispanics), age, and total days spent receiving services, as well as age and total case expenditures. Multiple regression analysis was conducted to determine if any differences existed in the type of closure, reasons for closure, and work statuses at closure based on race, age, gender, and educational level at application. The regression models indicated that consumers’ race and educational level at application affect type of closure. Consumers’ age, sex, and race influence reason for closure. Also, African American consumers were three times more likely to be unemployed or employed without supports at closure. Hispanic Americans were five times more likely to be unemployed at closure, nine times more likely to be employed without supports at closure, and 12 times more likely to be self-employed at closure. Logistic regression was used to ascertain whether race, age, sex, and educational level at
application influenced successful closures (Status 26). The results from the regression model revealed race had a significant effect on closure type (successful or unsuccessful). European Americans are more likely to have their cases closed successfully when compared to other racial/ethnic groups. The chi-square test indicated the six most beneficial services African Americans received when their cases were successfully closed (Status 26). These services were college/university training, business/vocational training, substantial counseling, job finding services, transportation and maintenance.
This dissertation is dedicated to my parents, Roy and Frankie Ware who have always given me unconditional love and support.
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I thank and praise God for giving me the strength and wisdom to endure all of life’s test and trials, knowing that they are meant to develop my character. Also, for the understanding that “…the vision is yet for an appointed time and at the end, it shall speak and not lie!”

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CHAPTER 1

INTRODUCTION

As the new Millennium unfolds we continue to see drastic changes in the United States. One of the major changes is the significant increase in the proportion of people of color in the population. Sue, Arrendondo, and McDavis (1992) indicated early on that beyond the year 2000, people of color would become a numerical majority in the United States. Earlier predictions are supported by the 1996 census projection that from the year 1996 to 2050 there will be up to a 14% increase in the number of people of color in the United States (U.S. Bureau of the Census, 1996). As the number of people of color increases, especially those with disabilities, a multicultural approach to rehabilitation service delivery is needed to address cultural differences among consumers.

Section 21 of the 1992 amendments of the Rehabilitation Act of 1973 brought attention to the inequitable treatment of minorities (African Americans) with disabilities in the state-federal vocational rehabilitation system. Over the past thirteen years, research continues to reiterate that the number of people of color with disabilities is increasingly high (Alston & Mngadi, 1992; Belgrave & Jamara, 2000; Hampton, 2000; Marshall et al., 1991; Smart, 1991, 1993, 1996; Wilson & Senices, 2005). Furthermore, inferences have been made that various ethnic/racial groups are underserved and
inappropriately provided rehabilitation services. In addition, people of color with disabilities have been “characterized as having a higher rate of disabling conditions and a higher potential of becoming disabled” (Wright, 1988; p.6). Particular attention should be paid to how consumer variables such as race, gender, type of disability, and age should be taken in consideration when working with rehabilitation consumers (Moore, 2001a; Capella, 2002; Wilson, 2002d). Consumer variables have been shown to influence acceptance rates and successful outcomes of consumers being successfully rehabilitated (Wilson, 1999, 2002d).

People with disabilities have had to endure the challenge of having a disability as well as the psychosocial adjustment to their disability in a society that has historically viewed disabilities as a deficit. Regardless the type of disability, whether physical or mental, a disability can create barriers for people in achieving their vocational potential and obtaining the “American Dream.” However, the employment of these individuals can positively affect society as a whole. Alston and Mngadi (1992) espoused that the vocational placement of an individual with a disability can positively influence other areas of the person’s life. The authors also contended, “being employed enables one to care for oneself and one’s family. Self-sufficiency is a great self-esteem booster, and a healthy self-esteem is one precondition for healthy relations with others. Healthy relations with others can contribute to one’s general satisfaction with life” (p. 12). Therefore it can be inferred that successful vocational placement of an individual can lead to improved self-esteem and self-sufficiency.
Discriminatory practices in employment, housing, healthcare, educational programs, etc., affect the quality of life for people with disabilities. People of color with disabilities, not only have to be concerned with discriminatory practices due to their disability; they also have racial discrimination to be concerned with as well (Whaley, 2001, 2004). Racial discrimination and physical impairment also referred to, as a “double-whammy” is a reality for people of color. Double bias faced by people of color has brought attention to service provisions in the vocational rehabilitation (VR) system. The acknowledgement and reality of double bias has caused researchers to investigate if the current VR system is adequately meeting the vocational needs of all VR consumers. Findings from previous research studies revealed that the VR system was not appropriately meeting the needs of people of color (Atkings & Wright, 1980; Fiest-Price, 1995). The Rehabilitation Act Amendments of 1992 acknowledged that people of color are more disproportionately disabled and traditionally underserved by the VR system and improvements must be established to address these inequalities (Rubin & Roessler, 1995). One proposed way to address these issues was to improve the quality of services provided by vocational counselors through advanced training, such as multicultural training on how to effectively work with consumers of various racial/ethnic and cultural backgrounds.

Multicultural counseling competencies can provide VR counselors with the tools needed to work effectively with individuals from diverse backgrounds who may have limited educational opportunities, language barriers, and cultural differences (Dziekan & Okocha, 1993). Multicultural training can assist VR counselors in examining their
own culture and increase self-awareness. As counselors become more comfortable with their own cultural values and worldviews, the more likely they will be able to respect and accept the worldviews of their consumers. The mutual respect, trust, and collaboration in the counseling process between the consumer and counselor, also known as the “working alliance” can lead to successful case closures (Donnell, Lustig, & Strauser, 2004). Additionally, the working alliance has been associated with successful outcomes with consumers with severe mental illnesses. Consumers who seek services from the public VR system are from various racial/ethnic backgrounds, educational levels, ages, gender, as well as disability types, such as emotional and behavioral mental health disabilities. Multicultural training can assist counselors in effectively working with consumers with significant differences (gender, race, disability, religion, class, sexual orientation, etc.) that may positively or negatively influence interactions between people (Sue, Bingham, Porche-Burke, & Vasquez, 1999: Granello, Wheaton, Miranda, 1998).

Purpose of the Study

The purpose of this study is to investigate the relationship between vocational rehabilitation (VR) outcomes of African American consumers with emotional and behavioral disabilities when compared to other consumers based on race, gender, age, and educational level at application. Also, to add further research on whether or not racial bias continues to exist in the vocational rehabilitation system.
Significance of the Study

In the United States there is a rapidly increasing population of people of color. A disproportionate number of people of color are disabled and traditionally underserved in the VR system. The rehabilitation process and outcomes are noted to be less favorable for consumers of color than for their counterparts in the white majority. This differential treatment of people of color has been well documented in the VR system (Atkins & Wright, 1980; Alston & Mngagi, 1992; Capella, 2002; Daneck & Lawrence, 1982; Dziekan & Okocha, 1993; Fiest-Price, 1995; Herbert & Martinez, 1992; Larkin et al., 2003; Spitznagel & Saxon, 1995; Wheaton, 1995; Wheaton, Wilson, & Brown, 1996; Wilson, 1999, 2000; Wilson, Turner, & Jackson, 2002; Wilson et al., 2002; Wilson & Senices, 2005). Prior research investigation of inequitable services for people of color focused primarily on the comparison of African Americans and European Americans (Atkins & Wright, 1980; Danek & Lawrence, 1982; Wheaton, 1995; Wheaton, Wilson, & Brown, 1996; Wilson, Jackson, & Doughty, 1999). Only a few recent studies (Ross and Biggi, 1986; Capella, 2002; Wilson, 2002d; Wilson & Senices, 2005) have investigated VR services of consumers of other ethnic/racial backgrounds such as, Native American/Alaskan Natives, Asians/Pacific Islanders, and Hispanics. Even though prior studies have examined the relationship between ethnicity and VR acceptance, progression, and outcomes, none have examined the connection between race, specifically African Americans with emotional and behavioral disabilities (EBD). Research has shown that African Americans are diagnosed with emotional and behavioral disabilities (depression, Bi-polar, ADHD, etc.) at extremely high rates
(Whaley, 2004). Also, the majority of prior studies are limited to the use of statewide
data. Whereas this study used national data (RSA 911) from the federal fiscal year
2002, which provided the researcher with a larger scope of cases and the most recent
representation of VR service outcomes. Specifically, this study sought to examine if
bias exist in the VR outcomes of African American consumers with EBD when
compared with other racial/ethnic groups based on age, sex, and educational level at
application. In addition, the results from this study will provide information for
replication and further research.

Explanatory Variables

Primary Disabling Condition

The physical and mental condition or impairment that is most responsible for the
client’s work limitation. Disabling conditions that are given the codes of 1801 to1824
are known as mental and emotional disorders and represent the consumer’s diagnoses at
acceptance. For this study, the researcher only examined consumers with Mood
disorders, Attention deficit/hyperactivity, Disruptive behavior disorders, and other
behavioral disorders (known as “emotional and behavioral disabilities” for this study).

Racial/Ethnic Status

A categorical variable with four levels (Black or “African American,” White or
“European American,” Hispanic Americans, and Other Race). Race/ethnicity is defined
as the self-reported race that is given on the application of consumers who received VR
services.
Age

A continuous variable from age 19 to 71 years of age. Self-reported by consumer at the time of application.

Gender/Sex

A categorical variable with two levels (male or female).

Educational Level at Application

A categorical variable with nine levels (No formal schooling, Elementary education (grades 1-8); Secondary education; No high school diploma (grades 9-12); Special education certificate of completion/attendance; High School Graduate or GED (regular education students); Post-secondary education, No degree; Associate degree or Vocational/Technical Certificate; Bachelor’s degree; Master’s degree or higher).

Criterion Variables

Total Case Expenditure (Money spent on services).

A metric or continuous criterion variable. The total amount of money spent by the VR agency to purchase services for an individual, over the life of the current service record. The total case expenditures for this study ranges from $0 to $54,250.

Hourly Wages at Closure.

A metric or continuous criterion variable. The total dollar amount the individual is making at the time of closure (Status 26). The hourly wage ranged from $0 to $42.18.
**Weekly Hours Worked at Closure.**

A metric or continuous criterion variable. The total number of hours an individual is working per week at closure (Status 26). The hours worked ranged from 0 to 70 hours. A histogram was conducted to investigate whether or not 70 hours was an outlier. The graph confirmed that the 70 hours was not an outlier.

**Total Days Spent on Case Services.**

A metric or continuous criterion variable. The total number of days spent providing services for a particular case that was successfully closed (Status 26). The days spent on case services ranged from 0 to 4,079.

**Hourly Wage Change Between Application and Closure.**

A metric or continuous criterion variable. The total dollar amount the individual was making at the time of application (eligibility) minus the total dollar amount at closure (Status 26). The hourly wage change ranged from $-25.70 to $42.18.

**Reason for Closure (Status 26, 28, or 30)**

A multichotomous variable with 14 levels which are (a) employed (b) unable to locate or contact, (c) disability too significant, (d) refused service, (e) death, (f) individual institutionalized, (g) transfer to another agency, (h) failure to cooperate, (i) no disabling condition, (j) no impediment to employment, (k) transportation not feasible (l) does not require VR services, (m) extended services not available, (n) all other reasons.
Type of Closure

A multichotomous variable with 7 levels which are (a) from application, before eligibility, (b) during/after extended evaluation, before eligibility, (c) with employment outcome, (d) after services, without employment, (e) after eligibility, before services, (f) after eligibility, from an order of selection waiting list, (g) after eligibility, before an IPE was developed.

Employment Status at Closure.

A multichotomous variable with 7 levels, which are (a) employment without supports in integrated setting, (b) extended employment, (c) self-employment (except BEP), (d) state agency-managed business enterprise program (BEP), (e) homemaker, (d) unpaid family worker, (e) employment with supports in integrated setting.

Type of Services.

A categorical variable with two levels (yes or no). There are 12 possible services that a consumer can receive. Types of services are described by RSA (1995) as:

1. Diagnostic/Assessment: Assessments that involves diagnosis and evaluation and can be medical, psychological, social or vocational in scope.

2. Restoration: Medical and medically related services which are necessary to correct or substantially modify a physical or mental condition.

3. College/University Training: All academic training on a level beyond secondary schooling.
4. Business/Vocational Training: Training in (a) a business/commercial school or college and (b) a vocational/trade school.

5. On-the job Training: Training by a prospective employer in the individual usually works for wages while learning the skills of a job.

6. Miscellaneous Training: Training that do not readily fit into the previous categories but that is required to prepare for or learn job skills.

7. Substantial Counseling: Counseling and guidance services that were of overriding importance in the totality of rehabilitation services delivered to the individual. Does not include counseling received from external sources to the VR agency.

8. Job Finding Services: Services and training that provides the consumer with enough information to permit the individual to arrange for a job interview with a possible employer on his or her own.

9. Job Placement: Services and training rendered when the individual is referred to and is hired by an employer.

10. Transportation: Service provided or arranged to enable the individual to arrive at appointments for assessment, medical services, training, or any other rehabilitation service, as well as to permit the individual to get to work.

11. Maintenance: Services provided to cover the additional costs incurred by the individual while he or she is undergoing rehabilitation services.

12. Other Services: Services not covered by other categories that an individual may need for training or work purposes.
Research Questions used in the Study

Overall Research Question

Is there a difference in the vocational rehabilitation (VR) outcomes of African Americans consumers with emotional and behavioral disorders (EBD) when compared with other consumers on race, age, gender, and education level at application?

Operationally, the research questions pertaining to VR outcomes of consumers based on race and emotional and behavioral disabilities are:

Question 1. Is there a difference in hourly wages at closure, hourly wage change from application to closure, total case expenditures, time spent receiving services, weekly earnings at closure for consumers with EBD based on race, age, sex, and educational level?

Question 2. Is there a difference in the type of closure, reasons for closure, and work status at closure (status 26) for African Americans with EBD when compared to other consumers based on race, age, gender, and educational level at application?

Question 3. Is there a difference in successful closures (status 26) and the reason for unsuccessful closures for African Americans with EBD when compared with other consumers based on race?

Question 4. Is there a difference in the types of services for African Americans with EBD at closure (Status 26) when compared to other consumers based on race?
Definition of Terms

1. **Race**: A categorical variable with four levels (African Americans, European American, Hispanics, Other Race). Race/ethnicity is self-selected by consumers on their application for VR services.

2. **African Americans**: Also known as “Black,” referring to a person having origins in any of the black racial groups of Africa.

3. **European Americans**: Also known as “White,” referring to person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

4. **Hispanic Americans**: A person is considered to be Hispanic if he or she is of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin.

5. **American Indian or Alaskan Native**: A person having origins in any of the original people of North America and maintain cultural identification.

6. **Asian or Pacific Islander**: A person having origins in any of the original people of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Island (e.g., China, India, Japan, Korea, the Philippine Islands, and Samoa).

7. **Disability**: A chronic condition that has been evident for an extended period medically defined as a physiological, anatomical, mental, or emotional, impairment that limits a persons’ functioning, or one or more major life events (Wright, 1980).
8. **Status 26 (Successful closure/rehabilitated):** This closure status identifies consumers whose case was closed as successfully rehabilitated.

9. **Status 28 or 30 (unsuccessful closure):** This closure status identifies consumers whose case was closed as not rehabilitated.

10. **Severe disability:** A severe disability is coded as a physical or mental impairment that limits one or more functional capacities, physical or mental disabilities or combination of disabilities determined by an eligibility and vocational rehabilitation assessment, and/or a disability that requires multiple VR services over an extended period of time (RSA, 1995).

11. **Emotional and Behavioral disabilities:** Operationally defined as mental health disabilities that affect the mood or emotional state and behavior, such as depression, bipolar I, attention-deficit/hyperactivity disorder, and other disruptive behaviors.

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

**Reason For Closure**

12. **Unable to locate:** The consumer has moved without forwarding address or disappeared.

13. **Disability too severe:** The consumer’s disability is so severe that it is not likely that the person will be vocational rehabilitated.

14. **Refused services:** The consumer declines to accept or use VR services.

15. **Death**
16. **Client institutionalized:** The consumer has entered an institution and will not be available to receive VR services for a considerable period of time.

17. **Transfer to another agency:** The services needed by the consumer are more appropriately provided elsewhere.

18. **Failure to cooperate:** The consumer’s actions (or non-actions) convince the counselor that it is not possible to begin or continue VR service (e.g., repeated failures to keep appointments for assessment, counseling, or other services).

19. **No disabling condition:** No physical or mental impairment is present.

20. **No impediment condition:** The consumer does have a mental or physical impairment, but the impairment does not constitute a substantial barrier to employment.

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

22. **Other:** This code is used to cover all other reasons not included by codes 13-23.

**Limitations of the Study**

Several limitations should be addressed in this study. The first limitation of this study is that archival data was used, thus causality cannot be inferred. The data is recorded and entered into a central computer. Second, it is assumed that any coding errors are random and unbiased. Another limitation is that a small sample was used in this study. Although national data was used, the researcher took an approximate proportion of consumers from each racial category in the population. A sub-sample was
used to allow for an adequate number of consumers from those racial/ethnic groups that
made up a small percentage of the total sample (i.e., Native Americans and Asian
Americans).

Basic Assumption

It is assumed that the instrument used for data collection was accurate and
reliable. Causality cannot be inferred due to this being an Ex post Facto study.

Summary

The United States population is growing and changing into a diverse culture.
People of color, especially those with disabilities will continue to increase in number if
the current trends remain. Research is needed to ensure that the current rehabilitation
system is equipped to handle the demographic, culture, and diversity changes through
eliminating bias, discriminatory practices, and historical stereotypes as well as increase
multicultural training and the hiring of more counselors of color to address cultural
differences among consumers.
CHAPTER 2

LITERATURE REVIEW

The purpose of this study is to investigate the relationship between vocational rehabilitation services and African American consumers with primary mental health disability (emotional or behavioral) that sought services nationally for the fiscal year 2002. Additionally, this study will determine if differences exist between consumer variables, such as age, sex, educational level at application in vocational rehabilitation service outcomes (i.e., hourly wages, weekly hours worked, total case expenditures, etc.). This study will provide additional information on whether biases continue to exist for African Americans, especially those with emotional and behavioral disabilities, as well as implications for diverse service delivery approaches.

Organization of Literature Review

This literature review will look at the following areas: (a) prevalence of psychiatric disabilities, particularly emotional and behavioral disabilities in the population; (b) African Americans and consumer variables; (c) counselor characteristics and variables that can have an impact on service delivery; (d) quantitative and qualitative studies on vocational rehabilitation outcomes as they pertain
to consumers’ variables (i.e., racial/ethnic status); (e) recommendations for innovative approaches to address the needs of people of color with disabilities and the conclusion.

**Psychiatric Disabilities**

Americans with disabilities vary in the type of disability, which may include a physical, mental, emotional, developmental disabilities as well as others (Marshall, 1991; Hampton, 2000). Disability is a chronic condition that has been evident for an extended period and medically defined as a physiological, anatomical, mental, or emotional impairment that limits a persons’ functioning, or one or more major life events (Wright, 1980). A severe disability is a physical or mental impairment that limits one or more functional capacities, physical or mental disabilities or combination of disabilities determined by an eligibility and vocational rehabilitation assessment, and/or a disability that requires multiple vocational rehabilitation services over an extended period of time (RSA, 1995).

The Rehabilitation Service Administration defines a psychiatric disability or a psychosocial impairment as “a mental impairment that causes or results in a substantial impediment to employment” (RSA 2002, p.10). In the United States, mental disorders are common with an estimated 22.1 percent or 44.3 million Americans, 18 years and older having a diagnosable disorder (National Institute on Disability and Rehabilitation Services, 1993). The prevalence of emotional and behavioral disorders, such as major depressive disorders, bipolar I, attention deficit and hyperactivity disorder, and other disruptive behaviors represents 5%, 1.2%, 3%-5% (in children) of the population, respectively (National Institute on Disability and Rehabilitation Services, 1993).
Major depressive disorder and bipolar I disorder are known as affective disorders with the main pathology being one of “mood” which is the eternal emotional state of a person (Kaplan, Sadock, & Grebb, 1994). A major depressive disorder is characterized by one or more depressive episodes, at least two weeks of depressed mood or lost of interest, and four additional symptoms (i.e., change in appetite or weight etc.) (American Psychiatric Association, 1994). The prevalence of major depressive disorder is greater for women than men, and the onset is between ages 20 and 50 years old, with a mean age of 40 (Kaplan, Sadock, & Grebb, 1994). In contrast, bipolar is characterized by a presence of one or more manic episodes lasting about one week with mania and depression occurring (American Psychiatric Association, 1994). The age onset for bipolar is as early as 5 or 6 years old up to age 50 years or older with a mean age of 30 years old. Women and men are equally as likely to develop bipolar. There is no difference in diagnosis from race to race (Kaplan, Sadock, & Grebb, 1994).

Attention-deficit/hyperactivity disorders (ADHD) is characterized by “a developmentally inappropriate poor attention span or age-inappropriate features of hyperactivity and impulsively or both” (Kaplan, Sadock, & Grebb, 1994, p. 1063). ADHD onset is as early as infancy and can go throughout adolescence persisting to adulthood, with 15 to 20 percent of the cases being adults. Adults tend to show less hyperactive behavior, but continues to be impulsive and accident-prone.
**African Americans**

For this review, African American is defined as those individuals that are from African ancestry, and those who define themselves as Black, Afro American, and African American. African Americans are not homogeneous even though this review may refer to them as though it is true. There are many variations that exist among African Americans. Although, variations are apparent, African Americans are still linked by their history and current universal experiences of racism and prejudice. African Americans are currently the largest minority group in the United States and they have a disproportionate number of disabilities in comparison to any other ethnic/racial group.

**Presence and Prevalence**

African Americans have a disproportionate number of disabilities compared to their presence in the population. The statistics are even more alarming for those African Americans who are of working age. Working-age adults with disabilities represent 13.4 million people and of this number, 2.4 million (18%) of the population and 12% in this country are African Americans (Belgrave & Jarama, 2000). African Americans with disabilities, even those with severe disabilities can be easily seen working, caring for a family and extended family, attending school/training, and actively participating in social activities like those individuals without disabilities. African Americans represents 24% of the working-age adult population of people with severe disabilities, but of this number only 13% are employed (Belgrave & Jamara,
2000). Also less than half are living below the poverty line. The diagnosis of a disability does not mean that the responsibilities a person had before the disability go away. Sometimes those responsibilities are more increased with the disability. Furthermore, an individual continues to need a steady income to pay for housing, food, utilities, and clothing to maintain the same standard of living. Especially those with psychiatric disabilities, which are not visibly seen like a physical disability, may be expected to carry on business as usual. African Americans have learned to function very well through the onset of a disability; the coping mechanisms used are remarkable.

Belgrave and Jamara (2000) espoused that environmental stressors lead to lower socioeconomic status. Their research showed that when compared to European Americans, African Americans’ prevalence of lower economic status was still high, even with race was controlled for. One explanation for lower socioeconomic status can be contributed to the reality of discrimination and oppression that leads to lower rates of employment and underemployment. The absence of employment results in the absence of health insurance and the utilization of health facilities or routine check ups, which leads to disabilities and many times disabilities that are severe due to a lack of medical attention. A vicious cycle is created and experienced for African Americans beginning with ethnicity at the genesis: race leads to discrimination and oppression, which leads to unemployment and underemployment, which then leads to lower socioeconomic status (financial), which leads to stress, depression, and, self-hatred, which ultimately leads to disability (mental/physical). Williams, Neighbors, & Jackson (2003) stated, “Perceptions of discrimination appear to induce physiological and psychological..."
arousal, and, as is the case with other psychological stressors, systematic exposure to experiences of discrimination may have long-term consequences for health” (p.206). African Americans with a mental health or psychiatric disability is high, especially those with emotional and behavioral disabilities (Jerrell, 2003). Many of the mental health disorders varies by race/ethnicity, sex, age, and socio-economic status, such as ADHD, however little research has been conducted in the variation of prevalence (Rowland, Lesesne, & Abramowitz, 2002). Jerrell (2003) explored the relationship between assessment, treatment, ethnicity (African Americans, specifically) and gender. The author examined the diagnosis of children up to age 17 who had been diagnosed with conduct disorder, attention-deficit/hyperactivity disorder and bipolar disorder through 17 mental health outpatient centers. For each of the three disorders, there was a majority of males and Africans Americans, approximately averaging around 50%. Using the DSM-IV criteria for each disorder to compare with medical records for the cases, the researcher found no gender or ethnicity differences. There was no greater likelihood to be diagnosed with conduct disorder, attention-deficit/hyperactivity disorder, or bipolar disorder. There was also no difference found in the likelihood of males or African Americans to meet the criteria for affective disorder (i.e. major depressive disorder).

In a more recent study, depressive symptoms in middle-aged African Americans were studied (Miller et. al., 2004). Two hundred and ten subjects in the study had relevant levels of depressive symptoms. Logistic regression analysis was used for the model and nine predictors were identified. Among these were female sex and social
support being the most important. The researchers concluded that centers for depression management should be developed just addressed the needs of this population, especially since relevant levels of depressive symptoms in middle-aged African Americans were greater than that for the U.S. population.

**Psychosocial Adjustment**

The psychosocial adjustment of African Americans with disabilities can offer important implications for the field of rehabilitation. The personal and familial/community resources used by African Americans are essential to understanding the psychological and social challenges faced by persons with disabilities. Many African Americans are being successfully rehabilitated and it is believed their successful rehabilitation is positively correlated with a healthy psychosocial adjustment (Alston, McCowan, & Turner, 1994). Many researchers believe the “family system” is a key factor to the healthy psychosocial adjustment of African Americans (Alston et al., 1994; Alston & Turner, 1994; Boyd-Franklin, 1989; Wilson & Stith, 1991, Belgrave & Jamara, 2000). The family system offers a support network that allows the person with the disability to continue everyday activities while adjusting to his/her disability. Other researchers (Myers, 1988/1993; Sue & Sue, 1990) believe that a person’s worldview or the way a person understand and relates to the world can facilitate his/her healthy psychosocial adjustment.

African Americans may not pursue VR services or do so with reservations because of a fear of backlash from racial discrimination, stereotypes, and negative attitudes held by dominant society. Research on African Americans with disabilities
and predictors of employment outcomes found there are other important variables that may hinder the successful employment for African Americans (Belgrave and Walker, 1991). These seven variables were social support, self-esteem, acceptance of disability, health locus of control, perception of severity of disability, educational level, and transportation. Their study concluded that 26% of the variance in employment could be explained by the seven variables. Also, transportation and social support are two important environmental supports for African Americans with disabilities. Marginally significant predictors were self-esteem and health locus of control. Variables that proved to be not significant were educational level, perception of disability severity, and acceptance of disability. Belgrave and Walker further contended that the results have many implications for rehabilitation counselors and counselor should be aware that social support is an invaluable aspect of the rehabilitation process.

Career counseling is another valuable resource or services for people of color with disabilities. Career counseling can assist in the selection of occupational choices and overcoming barriers that may impede successful employment. Feist-Price and Harley (1996) espoused that career counseling and development strategies for African American with disabilities are very valuable. Culture-specific issues, such as race or ethnicity many times influence the process of obtaining employment. African Americans are a complex group of people with unique challenges, which is also true of their multifaceted employment needs and career concerns. The authors asserted that job placement is a pivotal aspect of career development for African Americans with disabilities, because a disproportionate number who are working age are unemployed.
The authors advised that career counselors working with African Americans must focus on client strengths and not on the client limitations. Additionally, it is also pertinent that counselors interact with consumers of color (African Americans) in a manner that shows value and respect for cultural differences, yet effective. The authors further concluded:

Barriers such as discrimination, exclusion, and Eurocentric norms must be eradicated if counselors are to provide beneficial services to African Americans. Culturally appropriate career counseling for African Americans constitutes what is effective counseling. A commitment to providing career counseling to African Americans with disabilities in a cultural context is an empowering move for consumers, counselors and the nation. (p. 7)

To build a good working alliance with African Americans consumers, counselor need to acknowledge the consumers’ coping strategies and the cultural values they embrace.

Demographics

Notable changes can be seen in the population throughout the new millennium. Some of these changes will include people of color and those with disabilities being more present in the workforce. Leung (1993) noted the following, in reference to the influx of people of color since 1980: (a) 7.3 million Asian/Pacific Islanders, an increase of 107.8 percent, (b) 22 million Hispanics, an increase of 53 percent, (c) 30 million African Americans, an increase of around 13 percent, and (d) 2.0 million Native Americans, an increase of around 38 percent. These demographic changes are
important for vocational rehabilitation professional who will be working with a diverse racial/ethnic population. Vocational counselors must be knowledgeable about the internal and external factors that impact consumers when reaching their vocational potential.

The subsequent paragraphs will outline and provide information on various racial groups and the factors that may affect successful outcome through the VR system. The following ethnic/racial groups will be used in the investigation of this study.

Hispanics/Latinos. Mexican Americans is the largest subculture among Hispanics. This subculture is relatively young in comparison to other people of color, with a large number of them being of working age (Smart, 1993). Smart and Smart (1991) concluded from a review of literature that the acceptance of disability for Mexican Americans is highly dependent on five cultural factors. The five cultural factors that influences acceptance of disability of Mexican Americans are: (a) familial, cohesive, protective society; (b) a stoic attitude toward life in general; (c) well-defined gender roles; (d) religion views and (e) reliance on physical labor. Even though there are differences between Hispanic subgroups, these cultural themes are prevalent across most of the subgroups (Smart & Smart, 1996). Client acceptances of their disability may influence their decision to apply for services and the success of the entire rehabilitation process.

There is very little empirical researcher on this group of people and how they adjust to disabilities (Wilson & Senices, 2005). Smart (1993) conducted a study of Mexican Americans with disabilities and their level of acculturation and acceptance of
their disability. Acculturation can be define as the adaptation of culture, attitudes, values, norms, and behaviors as a result of consistent contact with individuals from different cultures (Smart, 1993). Acculturation is important in providing information on the amount and types of cultural-specific services are needed when working with people of color. Smart’s (1993) research found clients who indicated greater satisfaction with services were the clients who were less acculturated. Clients who were provided with a counselor who was bilingual and/or bicultural reported greater satisfaction with services. The researcher found no relationship between level of acculturation of Mexican American and acceptance of disability. In short, Mexican Americans accepting their disability was not related to whether or not Mexican Americans had changes in their attitudes, values or behaviors as a result direct contact with different cultures.

Asian Americans/Pacific Islanders. Asian American and Pacific Islanders (AAPIs) are steadily increasing in numbers in the United States. AAPIs are a heterogeneous group and this can be seen from their subgroups, language, and religion (Hampton, 2000). Two thirds of the AAPIs are recent immigrants or foreign born (Sue, 1997). Sue (1997) also posits “because of the relaxation of immigration quotas, the number of Chinese Americans will continue to increase” (p. 173). Many tend to live in metropolitan areas such as New York, Los Angeles, Chicago, etc (Chen, Jo, &Donnell, 2004). Limited data has shown that AAPIs are prone to experience disease that causes disabilities, such as Hepatitis B, Tuberculosis, cigarette smoking, psychiatric disorders
and substance abuse (Hampton, 2000). With the combination of an increase in population and increase disabilities, rehabilitation services are needed.

It appears that AAPIs are underserved in the rehabilitation system. Unfamiliarity with the system, language barriers, lack of transportation, fear of deportation and future residency, and financial difficulty are some of the reasons given for low rates of utilization (Chen, Jo, & Donnell, 2004). As a measure to increase effective services, rehabilitation professionals should take into consideration the cultural, religious, linguistic and psychosocial characteristics of AAPIs when services are being provided (Hampton, 2000). Hampton (2000) recommends that rehabilitation professional should build relationships with the AAPIs business community and educate them on legislation that advocates for fair treatment of AAPIs with disabilities. Due to the realization that AAPIs businesses may be the only place AAPIs consumers can obtain stable employment because of their lack of English proficiency. Counselors should also be aware of the role of the family and religion play when working with AAPIs consumers. Understanding these cultural characteristics can foster cooperative and respectful relationships. A positive relationship established with AAPIs with disabilities can enhance the VR process and help consumers successfully complete it while having an enjoyable experience.

Native Americans. Garrett and Pichette (2000) stated that “the term many Native American is often used to describe indigenous people of the Western Hemisphere in an effort to provide recognition, viewed by many as long overdue, of the unique history and status of these people as the inhabitants of the American continent”
Native Americans have a long history of multigenerational trauma and overcoming physical and mental barriers that were put into place to diminish their culture. They also had to endure laws that prohibited the practice of their native culture (language, religion, dress, etc.). Native Americans are still adjusting to the norms of the majority culture while still remaining connected to their heritage. For example, Native Americans will refer to fellow in-group members as “Indian”, but will refer to each other as Native Americans in the presence of non-Native American. Also, they prefer that non-Native Americans refer to them as Native Americans as well. Traditionally, Native Americans have had to deal with the trauma of being forced to abandon their religion, beliefs, values, and traditions and adopt the cultural norms of the majority culture. These practices had an adverse affect on the Native American people and often lead to alcoholism, depression, increase rates of suicides, high unemployment, poor health care and eating habits. Native Americans have more health related problems such as alcoholism, pneumonia, influenza, tuberculosis, and diabetes mellitus, than all other people of color (Marshall et al., 1991). Native Americans with disabilities, similar to other people of color, are underserved and inappropriately served by counseling professionals (Marshall, Martin, Thomason, & Johnson, 1991).

Native Americans and those with disabilities on rural Indian reservations experience socioeconomic issues such as the lack of transportation, which can hinder vocational potential. Hermanson, Landstrom, and Domitrovich (1994) conducted a study to find out if the lack of transportation greatly impacts employment and other vocational services to the residents the Flathead reservation (Lake County). The results
from the study concluded that 79 percent of the individuals with disabilities in Lake County surveyed indicated that transportation was an important issue to them. The participants were asked to rank 32 issues in total and transportation ranked as the fifth highest need of individuals with disabilities. Only 38 percent of the participants in the study expressed satisfaction with their current situation. This study provided several implications about the needs and issues facing people with disabilities as well as cultural differences in rural areas. It also brings attention to what progress has been made and what issues continually need to be addressed. The study showed financial assistance is needed to provide transportation in rural areas to individuals with disabilities who do not have a current rehabilitation plan leading to employment. These individuals have recreational or independent living needs that require transportation. Another rehabilitation implication is to develop appropriate and efficient ways to provide information about services to persons with disabilities in rural areas.

Marshall, Johnson, and Johnson (1996) offered a couple suggestions for meeting the needs of American Indians or Native Americans with disabilities. Their recommendations advised against using a “cookbook approach” to counseling or taking bits and pieces of information learned about Native Americans and then over-generalizing with the consumer. Also, counselors should take into consideration the worldview and level of acculturation of Native Americans when entering into a counseling relationship with them. Many Native Americans are heavily attached to their traditions, while on the other hand; some are not connected to their heritage at all and have acculturated into the majority culture. So, it is helpful for counselors to have
background information and the awareness that these differences exist in all cultures. More importantly, it is critical to see each person as a unique individual with his or her own unique experience and coping mechanism.

**Sex/Gender.** Some scholars (e.g., Danek & Lawrence, 1985; Harrison & Wayne, 1986; Rucker, Rice, Capella, 2002; Lustig, & Strauser, 2003; Warren, Giesen, & Cavenaugh, 2004) have noted that women with disabilities are underrepresented as rehabilitation applicants compared to their occurrence in the general population. Differences exist in the pattern of services, employment outcomes that reflect gender-role occupations and inequities in terms of financial gains in vocational rehabilitation for women.

Danek and Lawrence (1985) in their study on the adequacy and appropriateness of state rehabilitation agency services for disabled women discovered that women progressed more successfully through the system. Women were accepted more often for services and were more successful in obtaining employment. However, men and women were equal in regards to being successfully rehabilitated. When employment was evaluated according to occupation level in reference to education and sex, women were more frequently placed as homemaker as opposed to men. These results were seen even when homemaker was not the woman’s original vocational objective. Males, on the other hand, were placed more in professional, technical, and managerial positions. However, a higher than expected number of males closed in clerical and sales positions when those positions were not their original objective.
In a similar study, Harris and Wayne (1986) concluded that women with disabilities are accepted more for VR services when compared with men. The authors made this conclusion after their analysis on the association between acceptance for rehabilitation and sex revealed a larger number of women (52.09%) than men (49.5%) were accepted. A total of 15 demographic variables were examined in the study and after the researchers performed a second type of analysis yielded that sex explained only a trivial (0.02%) amount of the variance in the acceptance decision. Instead, severity of disability ranked the highest discriminating variable accounting for 2.12% of the variance. From these studies it can be concluded that women are accepted more often, progress through the VR system more successful, and are more successful in obtain employment, however men and women were successfully rehabilitated at the same rate.

Menz, Hansen, Smith, Brown, Ford and McCrowey (1989) in their exploration of gender equity in access, services and benefits from vocational rehabilitation suggested differences do exist in outcomes, access, characteristics, and service provision. At closure, men had an annual earning higher than women did at the time of closure. Difference existed at closure even though at the beginning of the application process no differences were visible. Women earned 67 percent income of that for men. Menz et al. reported that a man’s earning put them $1500 above the poverty level and put women $1000 below. Further findings showed that 9.4 percent fewer women closed in competitive employment. A higher percent of women (15% vs. 3%) closed in non-paying professions (i.e., homemakers) and were less likely supported to start a
small business (2.5 % vs. 1.8%). Women were closed more in female clerical-sales occupations (15.3% vs. 10.9%). While in comparison, men were closed in professional-technical-managerial occupations (45.5% vs. 41.5%). Double the percentage of men were closed in service occupations (14.6% vs. 6.9%). In traditionally male-dominated structural occupations, women made up less than 1 percent of the closure rate compared to men at 7.1 percent. A higher number of women came into the system receiving public assistance as oppose to men (25.1% vs. 17.5%).

On service provision the author found similarity for gender in average dollars spent, average months in status, and the average number of services provided to them. Dissimilarities between genders were found in types of skill training, which included that more women were provided business school training than men (4.2% vs. 1.8%), college training (13.2% vs. 11.8%), and vocational adjustment (23.1% vs. 21.1%). More often, men were provided vocational school training (14% vs. 12.4%).

In a more recent study, Ruck, Rice, Lustig, and Strauser (2003) explored differences between gender and employment outcomes. The study stressed the importance of consumers’ involvement in VR services and empowerment of these individuals with disabilities in the overall counseling process. Their study found that significant gender differences exist. Women reported being more involved in their counseling process than men. However, men reported getting jobs more often than women. It is believed that a consumer directed system, where the consumer plays an active role is not as effective for women as it is for men.
In conclusion, these studies showed that women are accepted for VR services more often than men, but both genders are equally being successfully rehabilitated. Nonetheless, women still remained to be placed in less professional positions, paid less for their employment, and receive less VR training.

Counselor Characteristics

The Department of Vocational Rehabilitation’s (VR) main goal is to increase the vocational potential of individuals with disabilities. Without the help of the VR system, employment opportunities for people with disabilities may be nonexistent (Feist-Price, 1995). Dziekan and Okocha (1993) asserted that individuals with disabilities who would rather secure stable employment instead of relying on public assistance should be empowered by state rehabilitation agencies.

It is a held belief that vocational rehabilitation counselors have the VR consumers’ best interest at heart as well as the goal to improve the quality of life for theses consumers. Thus, it is not unreasonable to assume that VR counselors work diligently toward the goal of consumers becoming successfully rehabilitated (“defined as successful case closure, time required to be accepted for services, and the consistency between clients stated vocational objective and actual job obtained,” Herbert & Cheatham, 1988; p. 51). Therefore, the role of vocational rehabilitation counselors is very important in the rehabilitation process as a whole. The VR counselor is the person who guides the consumer through the VR process. The consumer relies on the counselor to explain the rehabilitation process with simplicity and understanding regardless of the consumer’s education level, language barriers, and cultural
background (Dziekan & Okocha, 1993). Furthermore, vocational rehabilitation counselors have the responsibility of making decisions on consumers’ eligibility for VR services, the amount and type of services received, and the use of the consumer’s diagnostic assessment as a measure to determine which services will be beneficial. A vocational counselor may use various methods to determine eligibility for consumer services, such as direct observations, client interactions, and information gathering (Rosenthal & Berven, 1999). The impetus of successful rehabilitation is literally in the hands of the VR counselor, thus, which makes the client-counselor relationship very crucial. It is the hope that VR counselors are basing their decisions for eligibility and ineligibility on factual and valid information and not on biases related to the race of the consumer or other consumer variables. Research (Alston & Mngadi, 1992) has already shown that there are many variables (e.g., race, gender, education level) that may reduce the ability of VR consumers to achieve maximum vocational potential. Importantly enough, it should be noted that counselor variables and characteristics such as level of education, experience, and cultural biases could also influence the rehabilitation process as well as the outcomes of consumers being successfully rehabilitated.

Counselor variables play a major part in the vocational rehabilitation process and consumer outcomes. Counselor variables such as clinical impression, level of education, and training/experience have been correlated with successful caseload management and rehabilitation of VR consumers. The VR counselor’s clinical judgment does influence the outcome of the rehabilitation process and the distribution of VR services (Rosenthal, 2004). Whereas, client variables such as race, sex, and
severity of disability can have an effect on the type, amount, and outcome of VR services, even in some cases where the variances are small (Rosenthal & Berven, 1999). Furthermore, Dziekan and Okocha (1993) stated that biases that exist in the rehabilitation counselors’ perception of determining consumers’ eligibility for services might lead to inaccurate assessments and underestimation of their rehabilitation potential. People of color may face case management problems due to the lack of awareness on the part of vocational rehabilitation professionals (Alston & Mngadi, 1992).

Clinical Impression. Rosenthal and Berven (1999) in their examination of counselor’s clinical impression and the VR consumer’s estimates of future potential for education and employment concluded that no significant results existed when client race and counselor clinical impression were examined. The outcome from this study remained the same even when minimal client information and subsequent client information was provided. However, the authors did find that clients who were portrayed as African American were viewed as having less future potential then when clients were portrayed as White consumers. Even when subsequent information was provided, lower estimates of potential persisted when the clients were portrayed as African Americans. Furthermore, differences could be seen in participants mean ratings of client’s highest level of education and hourly wages of occupations. Clients portrayed as African Americans were rated as having an education mean of 2.66 as opposed to 3.16 when portrayed as White (3 = 6 months to 1 year of technical school training or a 1-year diploma). After subsequent information was reviewed mean scores
did improve but African Americans were still rated lower than Whites (3.85 and 4.22, respectively; 4 = 1 to 2 years of technical school training or a 2-year diploma). Also, clients portrayed as African Americans were viewed as potentially achieving lower hourly wages of $9.66 as oppose to $11.24 for Whites. After subsequent information was provided the mean wages were improved to $12.01 and $13.31, respectively.

Overall, the authors did not find enough variance in these variables to conclude that biases exist in counselors’ clinical impressions of consumers based on race. Nevertheless, results did show that counselors are making clinical impressions that view African Americans as having a less future potential, lower level of education, and achieving lower hourly wages than white consumers.

Rosenthal (2004) conducted a second web-based study that examined the clinical judgment of practicing European American VR counselors’ perception of psychopathology and estimates of educational and vocational potential of African Americans. African Americans continued to be judged more negatively than European Americans, even when minimal and subsequent information was provided. Findings from this study is comparable to the earlier study.

The conclusions found in both studies greatly influence the VR outcomes for people of color. A continued pattern of stereotypical beliefs held by counselors could eventually lead to bias being practiced in the VR system, if not addressed. One way to address this issue is through education and training.

**Education and Experience.** Vocational rehabilitation counselors with Master degrees, especially those who have a Master degree in Rehabilitation counseling tend to
have better caseload management performance than their colleagues with bachelor
degrees or Master degrees in other fields. Masters level VR counselors also had more
success in handling larger caseloads of consumers with severe disability. A master
degree in rehabilitation prepares the rehabilitation professional to work with people
with varying disabilities and who have different rates of adjustments. Furthermore, the
concentration and scope of the vocational rehabilitation program helps counselors
acquire the knowledge, awareness, and skills to understand the emotional, mental,
social, physical, as well as the vocational needs of the consumer. A counselor with a
degree in vocational rehabilitation obtains practical experience working with the
population the counselor will eventually serve, as well as the other entities within the
VR system that counselors with master degree in other disciplines most likely do not
offer.

Wheaton and Norman (1994) in their investigation of caseload management
performance revealed that the clusters of counselors who showed efficacy in successful
client outcomes had higher levels of education specific to the field of rehabilitation. In
regards to client outcomes, counselors showed a more effective performance and greater
self-reported competence. The authors also found that the clusters of rehabilitation
counselors with higher levels of professional education were positively related to
caseload management performance. When the relationship between caseload
management profile clusters and counselor experience were examined, no significant
relationship was found. Counselors who had a higher education level (Master’s
degrees) were also the preponderance of counselors with the most positive performance
profiles. These counselors had the majority of clients with severe disabilities, and were characterized as the severe disability specialist. In contrast, their study found that counselor cluster groups with Master degrees in an unrelated field or those without a Master’s degree had lower levels of performance in caseload management. Counselors who had Master degrees in rehabilitation, yet had higher caseloads, were not as effective or successful with client outcomes. The authors hypothesized this may be a result of higher workloads as oppose to lack of knowledge and skills.

In a similar study, Szymanski and Parker (1989) suggested new counselors with Master degrees had more competitive closure rates of clients with severe disabilities than inexperienced counselors. These authors’ results suggested that counselors with Master degrees in fields other than rehabilitation would face many more challenges in the first six (6) years of their employment with the competitive rehabilitation of clients with severe disabilities. The authors concluded, clients with severe disabilities fare better and achieve more successful outcomes with experienced or novice counselors with master degrees in rehabilitation. In a later study, Szymanski and Danek (1992) looked at the relationship between counselor education and rehabilitation client outcome in the state-federal vocational rehabilitation program. The researchers found similar results, Maryland DVR counselors with master degrees in rehabilitation had more competitive outcomes and were more cost efficient when compared with their colleagues with bachelor’s and master degrees in unrelated fields. Counselors with related master degrees also were more cost efficient in overall service delivery.
The level of experience of VR counselors has been positively correlated with counselors’ clinical judgment. Interestingly, counselors with more VR experience were found to be more critical of consumers and put more emphasis on negative information. The role of negative information, client disability, and counselor experience was investigated (Strohmer, Pellerin, & Davidson, 1995) and results discovered basis in counselor clinical judgment. The authors’ study discovered that counselors tend to have negative biases when negative and positive information was presented equally. Experienced counselors tended to place more emphasis on negative information and less emphasis on positive information than that of less experienced counselors. It was noted that counselors made negative judgments about the fictitious client’s psychosocial functioning as well. On the other hand, severity of the client’s disability had no significance on whether or not the clients were viewed negatively or positively.

Counselors are in the position to make critical decisions in the process of VR consumers being successfully rehabilitated. The counselor’s power to make life-changing decisions about clients’ life should be taken seriously. Middleton, Floweres, and Zawaiza (1996) stated rehabilitation professionals’ top priority should be to help all individuals succeed, regardless of their racial/ethnic status, and to remove obstacles that might hinder employment. Lastly, “Counselors must have an understanding of the range of responses to oppression and discrimination as a result of compounded effects of race and disability. Still further, counselors must have an understanding of coping with conflicts between mainstream. American values, those of one’s race and/or ethnic
heritage, as well as those of non-disabled population” (Feist-Price & Harley, 1996; p. 3).

**Multicultural Issues in Vocational Rehabilitation**

The composition of the United States has brought to the forefront a rapidly changing population as well as emphasizes the current mental health practices, service delivery, and new innovative approaches needed to address the diverse needs of a multicultural population. Racial/ethnic diversity and disability coincide with the changes of the U.S. population. Vocational rehabilitation counselors who provide services to people with disabilities should be equipped with the skills and knowledge to address the needs of those consumers who are from various racial/cultural backgrounds.

Sue, et al. (1982) in a position paper introduced the importance of the cross-cultural perspective to counseling and the rationale for the inclusion of cross-cultural competencies. The authors examined the current practices in the field of counseling and whether or not these practices were appropriate for clients of color. The information the authors gathered revealed that there was a need for the inclusion of cross-cultural counseling competencies and declared that current practices in the mental health field and in graduate programs were inadequate. “Cross-cultural counseling/therapy may be defined as any counseling relationship in which two or more of the participants differ with respect to cultural background, values, and lifestyle” (Sue et al., 1982; p. 47).

Cross-cultural counseling most times refers to a counselor who is from the major group (European) and a client who is from a minority group. However, the authors extended this definition to include counseling relationships where the clients are both people of
color but from different ethnic groups (African American/Hispanic). Furthermore, the authors presented characteristics of culturally skilled counseling professionals. They offered three domains: (a) beliefs/attitudes, (b) knowledge, and (c) skills. Beliefs/attitudes or also known as awareness, explore the participants comfort level with other cultures and evaluates their understanding of their own cultural influence on a relationship. Knowledge refers to the understanding of the socio-political factors that affect clients of color. Finally, skills refer to the techniques and assessment tools being culturally relevant and the use of non-verbal communication. The authors believed that mastery of these competencies would help counselors work more effectively with clients of color. In addition, these cultural competencies are meant to increase counselors’ own awareness about their beliefs/attitudes that are held towards clients of color and how these beliefs/attitudes can ultimately affect the counseling relationship.

Pedersen (1991) espoused “multiculturalism needs to be understood in a perspective that does not, however, replace or displace traditional theories by invalidating them”(p.9). Arrendondo et al. (1996) explains, “multicultural counseling refers to preparation and practices that integrate multicultural and culture-specific awareness, knowledge, and skills into counseling interaction” (p. 43). Therefore, as a counselor’s knowledge, skills, and awareness of multiculturalism increases, so should counselors’ ability to effectively meet the multifaceted treatment needs of people of color. Without counselors receiving appropriate multicultural training, counselors may only use counseling styles that represent a Eurocentric worldview. “Cultural factors have an important influence on the rehabilitation counseling process because many of
the psychological theories and techniques to promote personal, social, and vocational adjustment are embedded in a Eurocentric model” (Herbert & Cheatham, 1988; p. 51).

Granello, Wheaton, and Miranda’s (1998) conducted focus groups with practicing vocational counselors from various racial/ethnic groups (African Americans, European Americans, Native Americans, Asian Americans) on their use of multiculturalism. The authors’ findings revealed that rehabilitation counselors did not subscribe to a multicultural approach to counseling when working with their consumers. The authors also found that these counselors believed that knowing too much information about a particular racial/ethnic group would negatively influence their counselor-client relationship because the information may create biases. When several multicultural definitions were offered, the majority of counselors agreed that the definition should include not only race and culture, but also other variables such as gender, sexual orientation, and disability/ability. These practicing counselors stated that the expanded definition was more inclusive of the cultural variables that are representative of their consumers. The authors’ study revealed and confirmed multicultural counseling is training that is needed for vocational rehabilitation counselors.

In a more recent study, Bellini (2002) examined the relationship between counselors’ demographic, experiential, and multicultural training variables to the self-reported multicultural counseling competencies of state rehabilitation counselors. The author found that multicultural graduate level classes and multicultural training/workshops had a positive impact on the self-reported multicultural counseling
competencies, after taking into account effects due from demographics and experiential variables. Bellini’s study suggested that there is strong evidence that ongoing education training/workshops are beneficial of all VR counselors.

Matthews and Peterman’s (1998) article on improving the provision of effective treatment for racial and cultural minorities included many considerations to be addressed as well as the ones previously noted. Among these provisions are client therapist matching, structural characteristics of therapy, exploration of racial and cultural differences, and communication styles. Furthermore, Sue et al. (1999) stated that all of these cultural factors have a bearing on how people relate to each other and can affect the counselor-client interaction.

Feist-price and Ford-Harris (1994) suggested the following recommendations when rehabilitation counselors work with people of color, especially African American consumers:

For the rehabilitation practitioner who is not aware of multicultural issues, problems may occur as a direct result of (1) counter-transference, (2) lack of awareness or understanding of the African American experience, and (3) lack of empathy. For African American clients, the issues include (1) resistance to the rehabilitation counseling process (e.g., lack of self-disclosure and/or anger, (2) transference, (3) early self-termination, and (4) a general inability to grow during the process (p. 14).
These issues have pertinent implications for rehabilitation counselors who provide service to an underserved disproportionate number of people of color with disabilities. Vocational counselors who ignore these recommendations would be doing these consumers a disservice and creating another obstacle in their path to an improved quality of life.

Consumers’ Worldview

Herbert and Cheatham (1988) explained how traditional counseling methods such as Eurocentric world views believe that securing stable employment is a matter of ability, but tend to overlook factors such as racism and disability that may easily result in discrimination. Sue and Sue (1990) emphasized that when working with people of color it is important to first understand the person’s worldview. Understanding a person’s worldview can give insight into his/her values, traditions, attitudes, opinions, as well as help explain the way he/she thinks, make decisions, define events, and interacts with the environment. The authors also asserted, “the world view of the culturally different is ultimately linked to the historical and current experiences of racism and oppression in the United States” (p. 5).

Myers (1993, 1988) introduced an Afrocentric worldview as a conceptual system to view the world and as another strategy for African Americans to adjust to their lives and disabilities. The author reports:

Personal experience, culture, the general intellectual, moral, and social state of times, and at the most basic level, the conceptual system structuring the way one views the world, influence not only
psychological theory and one’s ideas about the nature of mankind, but these things are inseparable from the way we live our lives, organize our world (p. 39).

She theorizes that there are two basic worldviews, optimal worldview and the worldview held by dominant society, which she termed sub-optimal. A sub-optimal worldview is characterized as fragmented, foster “ism” (e.g., racism, sexism), view material and spiritual as separate entities, and values external criteria. The main focus of the sub-optimal worldview is on the person’s identity/self-worth that is based on the acquisition of external criteria. A person that holds this worldview believes that what is “real” is only those things that can be experienced by utilizing the five senses (e.g., touch, taste, smell, hearing, and sight). Furthermore, sub-optimal reality is grounded in the belief that human worth is based on how big a piece of the “material pie” that one achieves. Sub-optimal worldview holds the belief that there are two major characteristics that will give a person a better chance at the pie, which are being male and of European decent. If a person does not meet these characteristics then they are further away from the material pie. Unfortunately, this sub-optimal worldview does not work even for the very people that it was designed. The outcome of this type of socialization sets people up for racism and sexism. It also can result in many mental health issues such as, anxiety, depression, chemical dependency, and domestic violence. This type of socialization is very detrimental for African Americans. Instead African Americans need a worldview that is more conducive to their socialization and functioning in order to flourish in this society.
The optimal worldview is one based on the characteristics of harmony, balance, order, peace, truth, and justice. It is called “optimal” because it strives to reach a state of everlasting peace and happiness (Myers, 1988). Spiritual and material is seen as being one. Spirit is defined as energy and/or God. The concept of “self” is extended to include ancestors, the unborn, the community, and nature. Personal identity and self-worth is intrinsic and not predicated on material criteria. Situations are viewed and approached as diunital (this and that) as oppose to dichotomous (either/or). The optimal worldview holds some assumptions that are very powerful for the reinforcement of positive self-esteem for African Americans. These assumptions are:

1. Self-knowledge is believed to be the basis of all knowledge.
2. You have the power to define our own reality.
3. We are all connected.

The acceptance of these assumptions can assist African Americans in not viewing themselves as the victim but more in control of their destiny. African Americans do not have to feel “less than” because of the lack of material possessions or because of a disability. Their adjustment to life and their disability is in the power of their own hands; and they already have all they need to be successful and live a happy life even in the midst of adversity.

Myers (1988) concludes her explanation of worldviews with:

It is important to understand that all cultures have within their institutions and all individuals have within their worldviews the capability of both sub-optimal and optimal functioning. Thus European cultures are not without Afrocentric possibilities, just as
African cultures are not without sub-optimal functioning. Each individual must transcend his/her own beliefs to achieve oneness. A deeper appreciation of one’s own culture and respect for other cultures is a result of optimal psychology. Racism and anger are the result of sub-optimal systems. The point is that some cultures serve as more dominant examples of sub-optimal psychology (p.12).

Cultural Mistrust

Heppner and O’Brien (1994) stated, “one explanation for the underutilization and premature termination on the part of minority clients may be the lack of multicultural competence of practitioners” (p.4). Multicultural counseling competencies play a large part in counselors being able to relate to clients of color and their families, as well as being able to advocate for the client with an employer or other collaterals.

The lack of African Americans with a mental health disability seeking counseling services is often due to cultural mistrust of the mental health agency and counselor (Whaley, 2001a; 2001b; 2004). These consumers may delay treatment due to the cultural mistrust. Cultural mistrust continues to be an issue for consumers of color and does affect the attitudes and behaviors of African Americans. The reality of racism and discrimination in the lives of African American hinders their use of mental health facilities (Whaley, 2001a).

The Whaley (2004) study that explored the relationship between Black men with high levels of distrust (i.e. mild paranoia) and mental health problems found through their bivariate analyses that Black men were 3.5 times more likely than Whites men to
be hospitalized for mental health problems. Additionally, in previous mental health hospitalization, Black men were more than 49 times more likely than White men.

It has been suggested that cultural mistrust can be addressed by mental health professionals in the counseling session, by counselors being open to discuss racism and discrimination when it is brought up by the client (Whaley, 2001a). The author further asserted that cultural mistrust will continue if counselors dismiss the consumer’s request or misdiagnose it as a paranoia mental health disorder, such as schizophrenia (Whaley, 2001a, 2001b). People of color have psychological and environmental challenges that may prevent adaptive functioning. The intervention of psychotherapy/counseling can empower and restore appropriate thinking and behavior patterns. Many people of color have limited knowledge of counseling or what to expect during the counseling process. It is important that the therapist (or rehabilitation counselor) offers an overview of the counseling process during the initial stage of counseling for people of color. The therapist must be able to address clients’ questions in a way that foster a positive collaboration in the relationship. The therapist and the client alike, regardless of race, should be able to discuss racial issues. They also should increase their knowledge about the influences of culture, gender, and class on psychological development and this should enhance the counseling with clients from diverse backgrounds. Communication is also very important to the provision of effective treatment. Sue and Sue (1990) asserted that the appropriate and accurate ability for counselors and clients to send and receive verbal and nonverbal messages are also pertinent to effective counseling. Misinterpretation of verbal and nonverbal
message has the potential for disaster and can create barriers to effective counseling. However, an increase of multicultural competence training and skill advancement should be able to address these issues.

**Vocational Services and Acceptance**

In a groundbreaking study, Atkins and Wright (1980) brought attention to the unequal treatment of African Americans in the public rehabilitation system. These researchers conducted a study using national data from the Rehabilitation Service Administration for the fiscal year 1976. Their investigation looked at the service delivery to African Americans and European Americans. The authors asserted that significant differences could be seen in acceptance rates, accessibility of services, and African American being provided a lesser amount of services to secure employment, even though African Americans were more at a disadvantage. They also examined the reasons for closure once a consumer was found ineligible for VR services. The researchers conducted 41 chi-square test and found 37 of them to be statistically significant. Their overall conclusion was that “Blacks fare worse at every step from referral to closure” (p. 44). Detailed findings of their study are summarized below.

**Education at Referral.** Whites were found to have higher levels of education than Blacks. More Whites (32.54%) had completed 12 years of school, whereas Blacks’ highest percentage (26.77%) of completed years were nine through 11. Secondly, more than twice as many Whites (12.8%) had completed 13 or more years of education than Blacks (6.42%). Finally, More Blacks (20.53%) had previously been in a special education program than that of Whites (11.52%).
Primary Source of Support at Referral. Even though both Whites and Blacks received support from family and friends, overall there were more whites (48.62%) compared to Blacks (43.73%). Significantly more Blacks (20.15%) than Whites (11.08%) were reported to receive their primary funding from public assistance.

Weekly Earnings at Referral. The majority of Blacks (13.66%) as compared with Whites (11.88%) fell in the $100 dollars earning or less category. Secondly, Fewer Blacks (4.08%) than Whites (6.68%) were in the $100 dollars or more category. Lastly, Blacks (0.30%) were more than four times less likely than Whites (1.11%) to earn $200 dollars or more weekly.

Nonacceptance of Application for VR. Blacks were more likely not to be accepted for VR services when compared to Whites (58.14% vs. 51.18%, respectively).

Differences in Reason Given for Not Accepting Applicants for Service. Atkins and Wright found that African Americans were coded as ineligible for VR services for “failure to cooperate” (12.09 %), which was significantly much higher, than European Americans (8.59 %). Additionally, the researchers found other reasons for ineligibility that African Americans had “no vocational handicap” (7.25%) and (4.41 %) for European Americans. For the reason of “no disabling condition” African Americans were (6.18 %) and (3.13 %) for European Americans.

Accepted Cases Not Rehabilitated. The cases that were actually rehabilitated were less for Blacks than for Whites. More Blacks (42.25%) than Whites (34.86%) cases were closed before successful completion of the process after acceptance.
Patterns of Services. Differences were evident in the type of services by Blacks and Whites. Inequalities were found in that more Whites being provided education or training. Also, double the percentage of Whites (11.29%) received higher education than that of Blacks (5.14%).

Public Funds Spent for Case Service. When the amount of money spent on case services were evaluated, Blacks received fewer funds than Whites. When purchased case services that ranged between $4,000.00 through $9,999.00 were examined, a greater percentage of Whites (4.05%) than Blacks (2.8%) were in this category.

Weekly Earnings at Closure for Rehabilitated Clients. Significantly larger number of Whites than Blacks was closed with weekly earnings of $100 and over categories. Whites (7.34%) were three times likely to be closed at weekly earnings of $200 dollars or more than Blacks (2.98%).

Questions surrounded the accuracy of the findings of the Atkins and Wright’s study, so Bolton and Cooper (1980) was asked by the editors to respond to the methodology and interpretation of the findings. Bolton and Cooper analyzed federal data from Fiscal year 1977. Their results were the same, however they questioned how the results should be interpreted. Specifically, the investigation of acceptance for VR services yield a difference of 5.5% between Blacks and Whites (46.3% vs. 51.8%, respectively). The researchers stated that a 5.5% difference did not demonstrate unequal treatment without taking into account other factors (education level, etc.) that may have a barring on the results. They concluded that the small variances that existed between the two groups were not significant enough to be interpreted as inequalities.
Since these two groundbreaking studies surfaced, other studies have shown conflicting results of service outcomes based on race (Wilson, 1999b; Feist-Price, 1995). However, what remains clear is that people of color deserve to be treated fairly and be provided with the same quality of services.

Other researchers began to conduct studies to investigate if differences existed in the outcomes of people of color with disabilities who sought services from the public vocational rehabilitation system when compared with European Americans. Ross and Biggi (1986) conducted a study that looked at the reasons for case closure once consumers are found to be ineligible for VR services. The researchers did not only examine the usual targeted groups of African American and European Americans but also included Asians/Pacific Islanders and Native Americans for their investigation. New York VR state data from the years 1982 and 1983 were used for conducting the frequencies and percentages for this study. The authors found that for white clients, “refused service” was the primary reason for case closure in both 1982 and 1983. In contrast, for the same two years the most common reason for closure of non-whites was “failure to cooperate.” Other salient findings were that whites made up a higher percentage (81.8%) of status 26 or competitive closures whereas in 1983 more non-whites were closed in statuses 28 and 30 or non-rehabilitated closures.

Ross and Biggi reported the case findings for each racial/ethnic group in rank order (highest to lowest). European Americans had the likelihood to be closed because (a) refused services, (b) failure to cooperate, (c) handicap too severe, (d) other, (e) unable to locate. For African Americans, they had the likelihood to be closed for (a)
failure to cooperate, (b) refused services, (c) handicap too severe, (d) unable to locate, and (e) other reasons. Asians/Pacific Islanders reasons for closure were (a) refused services, and (b) unable to locate, (c) handicap too severe, (d) failure to cooperate, and (e) other. Finally, Native Americans/Alaskans reasons were (a) failure to cooperate and (b) refused services, (c) unable to locate, (d) other, and (e) handicap too severe/institutionalized.

Their findings did show that the primary reason for African Americans and Native Americans cases closure was “failure to cooperate.” The authors posed the question, “Does ‘failure to cooperate’ as a reason for closure as used by counselors represent an ethnic bias or a legitimate reason for closure since ‘refused services’ was the primary for closure for majority clients across statuses and across fiscal years while ‘failure to cooperate’ was the predominant primary reason for closure for nonwhites?” (p. 45).

As a way to shed more light on the issue of case closure statuses, a more recent study was conducted (Wilson, Jackson, & Doughty, 1999). Using African and European Americans as their targeted group, the researchers found the reasons for closure did differ between the groups as well as their findings being similar with prior studies (Atkins & Wrights, 1980; Ross & Biggi, 1986). The two primary reasons for African Americans cases being closed were (a) unable to locate, and (b) failure to cooperate. For European Americans the two reasons for closure were (a) handicap too severe, (b) no vocational handicap and other. Their finding continues to support the debated issue of counselor bias in case closure. Furthermore, their study showed a
needed increase for more multicultural training of VR counselors to address the needs of working effectively with diverse populations. It is important for the vocational rehabilitation field to achieve equity of VR services to consumers.

Client variables such as race, sex, and disability type have been shown to be correlated with the type and amount of rehabilitation services received by consumers. Dziekan and Okocha (1993) conducted a study that looked at accessibility of services for VR consumers in a midwestern state agency for a five-year period (1985 to 1989). A significant relationship was found between the minority and majority groups’ status and acceptance rates from the results of chi-square tests of association for five years. The researchers found that consumers of color were accepted for services at lower rates than the majority group. This finding remained to be true even though applicants of color applied for services at higher rates (12.9%) than their representation in the total population (7.8%). Their investigation also yield the following findings on acceptance rates: (a) individuals in the majority (European) were accepted at a higher rate (60% or greater) than all the minority groups and all minorities as a total group (under 50%); (b) African Americans and Hispanic Americans were less often accepted; and (c) among racial-ethnic minority groups, Native Americans ranked highest (over 50%) as people of color being accepted for VR services.

In a later study that investigated acceptances rates found findings that were in contrast to the earlier studies. Wheaton (1995) in his examination of the acceptance rates for VR services for European Americans and African Americans found no statistically significant difference between European Americans and African Americans
who were eligible for VR services. Wheaton’s study differed from previous studies because the researcher statistically controlled for race when the prior studies (Atkins & Wright, 1980; Dziekan & Okocha, 1993; Hebert & Martinez, 1992) did not. The researcher used the chi-square test of homogeneity that has advantages over looking at just percentages (used by Atkins & Wright, 1980) and the chi-square test of association (used by Dziekan & Okocha, 1993). The chi-square test of homogeneity has the following advantages: (a) test whether observed difference are due to chance, (b) can directly test the affect of the explanatory variable on the criterion variable, and (c) allows sampling to produce equal sizes, which improve in the detection of difference that may exist between groups (Wheaton, 1995). However, the results did show that European Americans were slightly more likely to be accepted than African Americans, 52.7% as oppose to 47.3%, respectively. The author concluded from his study that counselors are not making eligibility decisions that are based primarily on consumers’ race.

In a similar study, Feist-Price (1995) in her analysis of African Americans with disabilities and the use of VR services reported that differences due to race existed in accessibility, service delivery, and outcomes. Findings also revealed, European Americans with disabilities are accepted for services more often, have a higher number of successfully rehabilitated persons, and usually obtained higher paid positions than African Americans. More specifically, at the time of referral differences were seen in the areas of level of education and weekly income. Significant differences discovered that European Americans completed 12 years of school more often (37.38% vs. 31.83%
for African Americans) and completed 13 or more years of school (13.25% vs. 11.98%, respectively). Also, a higher number of African Americans (21%) compared to European Americans (15%) were in special education programs when they completed postsecondary school. The author’s most notable findings were: (a) more African Americans were assessed as ineligible for VR services (64.22 %), (b) European Americans (90.43 %) received more services than African Americans (9.57%), and (c) European Americans (90.21%) were closed more often in competitive employment when compared with African Americans (9.79%). The author used descriptive statistics (frequencies and percentages) for all analyses in this study. To determine if the two groups differed on the criterion variables, a chi-square analysis was chosen. The researcher methods differed from Wheaton (1995), which could explain the difference among findings. Also, the differences found in the two studies could be attributed to different samples being investigated and the studies being conducted at different times.

In a more recent study, Wilson’s (1999) study investigated African and European Americans differences in vocational rehabilitation acceptance. The author used a chi-square test of independence to see if a relationship, negative or positive, existed between the explanatory (race) and the criterion (acceptance) variables. The results from the chi-square test yielded no statistically significant difference between VR acceptance for African Americans and European Americans. The results of this study on vocational rehabilitation acceptance rates were similar to the results found by Wheaton (1995). Wilson found that only 20.4 percent of both African Americans and
European Americans are not accepted for VR services. The number is small compared to other studies that showed a higher proportion (Fiest-Price, 1995).

Meanwhile, Wheaton, Wilson, and Brown (1996) analyzed consumer sex, race and closure status as it pertained to the utilization of 13 possible VR services (i.e., diagnostic, restoration…). The authors concluded that rehabilitation programs that offer a large number of services have a greater effectiveness with consumer outcomes than an agency offering fewer services. Surprisingly, their results showed the majority of unsuccessful closure cases were ones where the consumers received college training. This finding is surprising considering that it is the belief that college training would lead to competitive employment. In regards to consumer’s sex, they found that women received fewer services than men and are less likely to receive services that lead to successful closure such as, job referrals and placement. The authors also discovered that African Americans receive more services than Europeans. However, African Americans are more likely to receive adjustment training, transportation, and maintenance as oppose to restoration services and college-level training that could lead to more competitive employment. In another study, Wheaton, Finch, Wilson, and Granello’s (1996) research that examined the types and amount of VR services received by consumers based upon sex, race and closure status, found differences in the types of services received. For instance one salient finding was African Americans consumers received counseling less often than European Americans. The reasons why these differences exist on this particular service are unclear. However, some researchers (Sue
& Sue, 1990; Garrett & Pichette, 2000, Whaley, 2002) speculate that it may be due to the mistrust that African Americans have for European counselors.

Tucker, Abrams, Chennault, Stanger, and Herman (1997) investigated the relationship between counselors’ rehabilitation success, as measured by rehabilitation rates and numbers of rehabilitated clients, and the levels of satisfaction of VR clients with their counselors and VR services received. The researchers also wanted to investigate whether VR services received differed due to the clients’ race, gender, age, and/or education level. The research findings showed that overall clients in the study were satisfied with their counselors and the VR services received. Interestingly enough, client satisfaction rates remained high even though 62.1 percent of the VR clients in the study did not achieve job placement as a result of VR services. The research found no significant differences in clients’ satisfaction rating of counselors and VR services when the clients’ race, age, gender and education level was analyzed. Furthermore, the study suggested that the measure of job performance did not account for the counselor’s attitudes, knowledge, and skills that lead to client satisfaction. The authors believed counselors could be unfairly evaluated if they are judged primarily on success statistics (37.9% obtained employment) because they do not measure qualitative job performance variables (i.e. supportiveness).

It has been speculated that the low levels of consumers being accepted for VR services are due to the biases in the perception of the VR counselors (Dziekan & Okocha, 1993; Fiest-Price, 1995). Also, previous researchers believe that without appropriate multicultural training, rehabilitation counselor may attempt to use
counseling styles adopted by dominate society, which are not always appropriate for consumers of color.

More recently, Capella (2002) conducted a study to answer the question, “Do biases still exist in the VR system for racial/ethnic groups and women?” Using the RSA 911 national data from the year 1997, the author examine acceptance rates, employment outcomes, and quality of successful closures based on ethnicity, gender, educational level, and severity of disability. The study used multivariate statistics, which allowed the research to control for other relevant variables that could explain the variation in acceptance and outcomes of VR services. Whereas previous studies used chi-square, even though is appropriate for categorical data, it offers little information. The researcher also used five racial/ethnic groups (Native American, Hispanic American, Asian American, African American, and European American) and used a proportional sample so that all groups would be represented equally. The results revealed that all logistic regression models were significant. The researcher concluded that bias continues to exist for people of color in terms of acceptance rates, and employment outcomes. Successful closures were affected by gender when combined with age. For example, as a woman’s age increased, being placed in a high quality job decreased when compared to men. European Americans with severe disabilities had higher acceptance rates than African Americans with severe disabilities. However, no bias could be seen on successful closures based on race even though Europeans Americans had a larger number of successful closures. Also, the interaction between
gender and race was not significant in any of the models. This study adds more conflicting data that race and gender continues to influence VR outcomes.

**Recommendations for Rehabilitation Professionals**

Atkins (1988) gave a list of recommendation for rehabilitation professional to enhance their working relationship with consumers of color. These recommendations are also meant to improve the rehabilitation system as a whole and its practices and make the system useful and beneficial for all people regardless of race or disability. The author made the following recommendations:

1. Competent rehabilitation personnel must be educated in cross-cultural counseling and research. Education needs to reflect an assertive, positive, and objective approach to learning.

2. A national policy and Implication plan, research and evaluation program is essential. This program must be long-term and continuing.

3. All rehabilitation personnel must develop a sincere commitment to help advance the rights of disabled non-whites.

4. Outstanding and exemplary rehabilitation programs and practices serving disabled minorities need to be researched and shared.

5. The valuable resource available for assisting nonwhites in rehabilitation is the minority individual him/herself. Meaningful dialogue must be developed with potential and current consumers to obtain their views of their needs and their suggestions for improved delivery systems.
6. Teamwork is essential in developing strategies and methods for service provision to minority clients. Teamwork can assure the pooling of resources for the “good” of the consumer.

7. Self-help groups provide an excellent resource for use with minority clients. These groups provide, among other things, a sense of belonging and shared concerns, a method for self-expression, a way to assist others, and a way to learn from the experience of others.

8. The system of “networking” has a viable role in providing services to non-whites. The linkage of the client to the needed system may be one of the most valuable services a rehabilitation worker may provide.

9. Realistic appraisal an use of such groups as the church, family, volunteer organizations, and political organizations have much to offer when assisting nonwhites.

10. Meaningful professional training programs can be another vehicle for increasing the participation of minorities in rehabilitation.

11. Public rehabilitation legislation should be used to ensure that resources are more directly provided to cross-cultural clients.

12. Self-advocacy, assertiveness training, and political astuteness need to be taught consistently to minority consumers.

13. The mass media must be educated and employed to advance the positive aspects of disabled minority experiences and culture.
14. Some of the basic questions that must be asked of minority persons which will begin to serve as a knowledge base for future planning include:
   a. What reasons do minorities give for not seeking rehabilitation services?
   b. What are the experiences (positive and/or negative) of nonwhites who do seek rehabilitation services?
   c. What do minority persons view as barriers to the availability, accessibility, acceptability, and adequacy of rehabilitation services?

15. Cross-culturally skilled rehabilitation personnel (CCSRP) must be able to generate appropriate and cross-culturally realistic options with their minority clients.

16. Knowledge and understanding of human rights, of cultural and rehabilitation politics, and of legal issues are required of CCSRP.

17. Assertiveness in case finding of minority consumers is required. CCSRP must be willing to enter nonwhite communities in order to ensure adequate case finding.

18. Individual differences among minority consumers must be assessed and respected.

19. Sincere and consistent recruitment programs must be developed and implemented to ensure that appropriate numbers of nonwhites are not only employed but retained and promoted in rehabilitation practice and education.

20. CCSRP must support and participate in research which explores minority issues from a constructive stance.
21. A national institute for research on minorities would facilitate rehabilitation investigations regarding disabled nonwhites.

The author addressed the different facets of the rehabilitation system, process, the professionals and collaterals, as well as emphasized the importance of giving the consumer a voice. Strong recommendations were made for research, especially qualitative studies that would make consumers the focus. Consumers would have their opinions heard on how they believe the rehabilitation system is working or not working for them.

Summary

The rehabilitation system is establishing measures to incorporate multiculturalism into its theories and practices, hiring more counselors from diverse background, and improving the vocational outcomes for consumers of color. Research has already shown that some improvements have been made in the vocational training rates that favored people of color as well as disparities in service costs (Bellini, 2003). It is suggested that rehabilitation counselors should use a holistic counseling approach to view his/her client, regardless of racial or ethnic identity (Stebnicki, Rubin, Rollins, and Turner, 1999). Witmer (1996) espoused the holistic perspective focuses on the whole person and tries to achieve a balance between physical, mental, social, emotional, and spiritual dimensions. Witmer also stated that these dimensions are interrelated and work in conjunction of one another. The holistic approach allows counselors to view clients not only in terms of their disability, but includes their psychological status, vocational experiences, educational background, and social issues as well (Brodwin &
Brodwin, 1995). Some researchers agree that the issues facing people with disabilities are not solely due to their disability but may be attributed to their social, emotional, and psychological condition (Asbury, Walker, Belgrave, Maholmes, & Green, 1994; Belgrave & Jamara, 2000). For instance, if a client is receiving effective rehabilitation services, it can be inferred that progress made in the client’s personal life can influence his/her vocational experience as well. Counselors who subscribe to the holistic approach and have the ability to see the client as a whole person and not just someone with a disability, will enhance the counselor’s effectiveness and credibility with clients of color.

The inequities in the VR systems continue to be debated. Thirty-five years ago Atkins and Wright (1980) first made “the statement” about unfavorable treatment for African American consumers when compared to European Americans in the VR system, from acceptance to closure. Since that time, numerous research studies have been conducted to support or disprove earlier claims of differential treatment. Over the past several years, there have been studies that have continued to confirm that as “some things change, some things stay the same” with consumers of color being accepted less for VR services and less favorable closure rates (Wilson 2002a, 2002; Capella, 2002; Moore, 2001a; Moore, Fiest-Price, & Alston, 2002b). On the other hand, some researchers have found disparities (Giensen, Cavenaugh, & Sansing, 2004; Bellini, 2003).

The results from this study will offer more valuable information to the field of rehabilitation as the debate continues. This study seeks to examine the differences that
exist for African American consumers with EBD and outcome variables when compared to other racial/ethnic group based on age, gender, and educational level at application.
CHAPTER 3

METHODOLOGY

This chapter describes the methodology used in this study. This study seeks to investigate the differences in vocational rehabilitation (VR) service outcomes of African Americans with emotional and behavioral disabilities who sought services nationally through the vocational rehabilitation system for the federal fiscal year 2002 (FFY02).

Overall Question

Is there a difference in the vocational rehabilitation (VR) outcomes of African Americans consumers with emotional and behavioral disorders (EBD) when compared with other consumers based on race, age, gender, and educational level at application?

Operationally, the research questions pertaining to VR outcomes of African American consumers based on race and emotional and behavioral disabilities are:

Question 1. Is there a difference in hourly wages at closure, hourly wage change between application and closure, total case expenditures, days spent on services, and weekly hours worked at closure for African American consumers with EBD when compared with other consumers based on race, age, sex, and educational level?
Question 2. Is there a difference in the type of closure, reasons for closure, and work status at closure (status 26) for African Americans with EBD when compared to other consumers based on race, age, gender, and educational level at application?

Question 3. Is there a difference in successful closures (Status 26) and the reasons for unsuccessful closures for African Americans with EBD when compared with other consumers based on race?

Question 4. Is there a difference in the types of services received by African Americans with EBD at closure (Status 26) when compared with other consumers based on race?

Research Design

This study examined the differences that exist in the participation, progression, and outcomes of African American consumers with a primary mental health (EBD) disability who sought services through the vocational rehabilitation system for the federal fiscal year 2002 (FFY02). A correlation design was selected by the researcher to examine whether or not relationships exist between the variables under investigation. The limitation of this design method is that it does not provide any information in regards to the cause-and-effect of the relationships.

Procedure

Sample

The national database included 650,000 consumers who sought VR services for the fiscal year 2002 (October 1, 2001 through September 30, 2002). First those cases with a primary mental health disability codes (RSA, 2002) of 1807 (Attention-
deficit/hyperactive disorder), 1815 (Depressive and other mood disorders), and 1824
(Mental illness, not specified elsewhere) were selected out. The sampling frame (after
removing all missing records) was N = 36,307. After combining American Indian,
Asian and Hawaiians together in one race category called “Other Race”, there are four
race categories. Together with the respective sample size, there are 27,523 European
Americans; 6,824 African Americans; 1,202 Hispanics, and 758 Other Race. A
proportional sample was taken of consumers from each racial category. A subsample
was used to allow for an adequate number of consumers in racial/ethnic groups that
made up a small percentage of the total sample (i.e., Native Americans and Asian
Americans). A sample of 400 cases from each of the four race categories was
randomly selected, which resulted in a final sample of 1,600 cases. The final sample
still allowed for the suggested 50 cases per predictor variable needed to make the
logistic regression stable (Aldrich & Nelson, 1984). This study has four predictor
variables and would need at least a minimum of 200 cases.

Instrument

The data used for this study was generated from the national RSA-911 database
where information is imputed that has been gathered from VR counselors’ opened and
closed cases. During the initial stage of case openings, the VR counselor codes for
acceptance or eligibility of a consumer to receive services. For this study, counselors
code the hourly wages, hours worked weekly, total case expenditures, days spent
receiving services, and work status at closure (Status 26). RSA-911 national data
conforms to federal guidelines established by RSA (1995). This study relied on
archived data from the national RSA-911 data tape, miscoding can occur with the
collection and analysis of data. The Rehabilitation Services Administration has
developed a system to monitor and decrease coding error by implementing 18
crosschecks (RSA, 1995). An error that may have occurred due to coding is assumed to
be random and unbiased. Outliers and suspicious patterns of the descriptive statistics
were closely examined.

Data Collection Procedure

Archival national data collected by the Rehabilitation Services Commission
during the fiscal year 2002 was used for this study. The RSA-911 national data are
recorded by all state Rehabilitation field offices and then is entered into a central
computer by clerical staff.

Analysis of Data

The Statistical Package for Social Sciences (SPSS 13.0 for Windows) was used
to analyze this data. SPSS generated descriptive and inferential statistic for all the
variables under investigation.

Explanatory Variables

Primary Disabling Condition

The physical or mental condition, impairment, or disease that is most
responsible for the client’s work limitation. Disabling conditions that are given the
codes of 1800 through 1900 are known as mental and emotional disorders and represent
the consumer’s diagnoses at acceptance. For this study, the research only examined
consumers with Mood disorders, Attention deficit/hyperactivity, Disruptive behavior
disorders, and other behavioral disorders (known as “emotional and behavioral disabilities” for this study).

Racial/Ethnic Status

A categorical variable with four levels (Black or “African American,” White or “European American,” Hispanic Americans, Other Race). Race/ethnicity is defined as the self-reported race that is given on the application of consumers who received VR services.

Age

A continuous variable from age 19 to 71 years of age. Self-reported by consumer at the time of application.

Gender/Sex.

A categorical variable with two levels (male or female).

Educational Level at Application

A categorical variable with nine levels (No formal schooling, Elementary education (grades 1-8); Secondary education; No high school diploma (grades 9-12); Special education certificate of completion/attendance; High School Graduate or GED (regular education students); Post-secondary education, No degree; Associate degree or Vocational/Technical Certificate; Bachelor’s degree; Master’s degree or higher).
Criterion Variables

Reason for Closure (Status 26, 28, or 30)

A multichotomous variable with 14 levels which are (a) employed (b) unable to locate or contact, (c) disability too significant, (d) refused service, (e) death, (f) individual institutionalized, (g) transfer to another agency, (h) failure to cooperate, (i) no disabling condition, (j) no impediment to employment, (k) transportation not feasible (l) not require VR services, (m) extended services not available, (n) all other reasons.

Type of Closure

A multichotomous variable with 7 levels which are (a) from applicant, before eligibility, (b) during/after extended evaluation, before eligibility, (c) with employment outcome, (d) after services, without employment, (e) after eligibility, before services, (f) after eligibility, form an order of selection waiting list, (g) after eligibility, before an IPE was developed.

Employment Status at Closure

A multichotomous variable with 7 levels, which are (a) employment without supports in integrated setting, (b) extended employment, (c) self-employment (except BEP), (d) state agency-managed business enterprise program (BEP), (e) homemaker, (d) unpaid family worker, (e) employment with supports in integrated setting.
Type of Services.

A categorical variable with two levels (yes or no). There are 12 possible services that a consumer can receive. Types of services are described by RSA (2002) as:

1. Diagnostic/Assessment: Assessments that involves diagnosis and evaluation and can be medical, psychological, social or vocational in scope.
2. Restoration: Medical and medically related services which are necessary to correct or substantially modify a physical or mental condition.
3. College/University Training: All academic training on a level beyond secondary schooling.
4. Business/Vocational Training: Training in (a) a business/commercial school or college and (b) a vocational/trade school.
5. On-the job Training: Training by a prospective employer in the individual usually works for wages while learning the skills of a job.
6. Miscellaneous Training: Training that do not readily fit into the previous categories but that is required to prepare for or learn job skills.
7. Substantial Counseling: Counseling and guidance services that were of overriding importance in the totality of rehabilitation services delivered to the individual. Does not include counseling received from external sources to the VR agency.
8. Job Finding Services: Services and training that provides the consumer with enough information to permit the individual to arrange for a job interview with a possible employer on his or her own.

9. Job Placement: Services and training rendered when the individual is referred to and is hired by an employer.

10. Transportation: Service provided or arranged to enable the individual to arrive at appointments for assessment, medical services, training, or any other rehabilitation service, as well as to permit the individual to get to work.

11. Maintenance: Services provided to cover the additional costs incurred by the individual while he or she is undergoing rehabilitation services.

12. Other Services: Services not covered by other categories that an individual may need for training or work purposes.

**Total Case Expenditure (Money spent on services).**

A metric or continuous criterion variable. The total amount of money spent by the VR agency to purchase services for an individual, over the life of the current service record. The total case expenditures for this study ranges from $0 to $54,250.

**Hourly Wages at Closure.**

A metric or continuous criterion variable. The total dollar amount the individual is making at the time of closure (Status 26). The hourly wage ranged from $0 to $42.18.
Weekly Hours Worked at Closure.

A metric or continuous criterion variable. The total number of hours an individual is working per week at closure (Status 26). The hours worked ranged from 0 to 70 hours. A histogram was conducted to investigate whether or not 70 hours was an outlier. The graph confirmed that the 70 hours was not an outlier.

Total Days Spent on Case Services.

A metric or continuous criterion variable. The total number of days spent providing services for a particular case that was successfully closed (Status 26). The days spent on case services ranged from 0 to 4,079.

Hourly Wage Change Between Application and Closure.

A metric or continuous criterion variable. The total dollar amount the individual was making at the time of application (eligibility) minus the total dollar amount at closure (Status 26). The hourly wage change ranged from $-25.70 to $42.18.

Research Questions

Question 1. Is there a difference in hourly wages at closure, hourly change between application and closure, total case expenditures, days spent on services, and weekly hours worked at closure for African American consumers with EBD when compared with other consumers based on race, age, sex, and educational level?

Variables. The explanatory variables were race (categorical), age (metric), sex (categorical), and educational level (categorical) and the criterion variables were hourly wages (metric), hourly wage change between application and closure (metric), total case
Sample test statistic. Multivariate Analysis Of Covariance (MANCOVA) was used to analyze the differences between groups on three categorical variables (race, sex, educational level), one metric (age) predictor variable and four metric (hourly wages, total case expenditures, case opening duration, and weekly earnings at closure) and one nonmetric (work status at closure) criterion variables. Multivariate Analysis Of Variance (MANOVA) “is a statistical technique which can be used to study the effect of multiple independent (treatment) variables measured on two or more dependent variables simultaneously” (Hair et. al., 1995, p.127). MANOVA is used to measure the differences of groups when the independent variables are all nonmetric, whereas MANCOVA is used when independent variables are metric (covariates) and nonmetric. MANCOVA is the appropriate statistic to use for this study since one predictor variable (age) is metric and the criterion variables (hourly wages, total case expenditures, case opening duration, and weekly earnings at closure) are metric. Like MANOVA, MANCOVA is held to the following assumptions: (a) the observations must be independent, (b) the variance-covariance matrices must be equal for all treatment groups, and (c) dependent variables must follow a multivariate normal distribution (Hair et. al., 1998, pp.347-348). Violation of the first assumption is considered to be the most serious. However, if violation does occur the researcher is encouraged to use some form of covariate analysis to account for the dependence, such as in this study (Hair et. al., 1998, p.348).
Violation of the second assumption has minimal impact if the groups are of approximately equal size. To determine equal sizes, the largest group size divided by the smallest groups must be less than 1.5 (Hair et. al., 1998, p. 348). The researcher should test and correct for unequal variance, if the sizes differ more than 1.5 (Hair et. al., p. 348). The Box test provides significance levels for the test statistic (Hair et. al., p. 348).

Violations of the last assumption (normality) for moderate sample sizes can be accommodated as long as differences are not due to outliers (Hair et. al., p. 348).

This researcher has to be concerned with linearity and multicollinearity, even with the usage of a covariate. Nonlinear relationships should be closely examined as well as high multicollinearity because it decreases statistical efficiency (Hair et. al., 1998, p. 349).

Test Statistic

The Wilk’s lambda (also know as the U statistic) will be used to assess multivariate differences across groups and test for overall significance of the MANCOVA (Hair et. al., 1998, p.351). The Wilks’ lambda is the best statistic to use because (a) it examines group differences without being concerned whether the differences are on at least one linear combination of the dependent, (b) can be approximated by an F statistic, and (c) it’s the most immune to violations, yet maintains the greatest power (Hair et. al., 1998, p. 351). In addition, “the larger the between-groups dispersion, the smaller the value of Wilk’s lambda and the greater the implied significance” (Hair et. al., 1998, p. 351).
Question 2. Is there a difference in the type of closure, reasons for closure, and work status at closure (status 26) for African Americans with EBD when compared to other consumers based on race, age, gender, and educational level at application?

Variables. The explanatory variables are race (categorical and multichotomous with four levels), age (continuous), sex (categorical and dichotomous), and educational level at application (categorical and multichotomous with nine levels) and the criterion variables were reason for closure (categorical and multichotomous with 14 levels), type of closure (categorical and multichotomous with seven levels), and work status at closure (categorical and multichotomous with seven levels), respectively.

Sample test statistics. Multiple logistic regressions were used to ascertain if differences exist between the explanatory variables and the criterion variables. Three separate logistic regression models were used, each with a different response, or outcome variable. The first model (model 1) examined reasons for closure; the second model (model 2) was concerned with the type of closure; and the third model (model 3) investigated the differences in work statuses at closure. Logistic regression is the appropriate statistical technique to analyze the relationship between a single dependent (criterion) variable from a set of explanatory variables (Hair, et al., 1998).

Results will provide estimates of the probability of an event occurring and will range from 0 to 1. Estimates greater than .50 indicates the probability the event will occur in the population, whereas a probability of less than .50 indicates that the event is unlikely to occur in the population. The regression coefficient \( b \) is interpreted as the logarithm “odds ratio” associated with a one-unit change in the explanatory variable,
but it can be difficult to interpret. Thus, the researcher can conclude there is no association between the variables when an odds ratio is 1.0. The researcher will need to use the \( \text{Exp}(B) \). The higher the exponent score, the greater the likelihood the event 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 greater 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 happen. When \( b \) is zero, the value of \( \text{Exp}(B) \) is 1, indicating the odds are unchanged (SPSS, 2000).

**Wald statistic.** The Wald test statistic is used to determine if the probability of an event happening is significant. In addition, the model chi-square test statistic is used to test the statistical null hypothesis (\( H_0: b(\text{race}) = b(\text{sex}) = b(\text{educational level at application}) = b(\text{age}) = 0 \)) that the logistic regression coefficients for all the terms in the model, except the constant \( b_0 \), are 0. The model chi-square is comparable to the overall \( F \) test (Hair et al., 1998). The \( R \) (partial correlation) was also used to assess the contribution of the explanatory variables \( b \) in predicting whether or not the event will happen, for example, being successfully rehabilitated (Hair et al., 1998). It is important to note, the \( R \) statistic is analogous to the \( r \) statistic in multiple regression.

Furthermore, the \( R \)-value is a partial correlation between the explanatory variables and the criterion variables, more specifically; it describes the contribution (correlation) of each explanatory variable in the regression equation. Small values of \( R \) indicate that the explanatory variable (i.e., race) 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 happening. A negative value of R indicates that as the value of the explanatory variable increases, there will be a decrease in the likelihood of the event happening (unsuccessful closure).

**Goodness of Fit.** It answers the question, how well does the model fit? A classification table and a histogram of observed versus predicted probabilities is one way to assess the goodness of fit. The classification table displays the predicted and observed outcomes. The histogram displays a graph of the observed group and estimated probabilities for each case. Thus, the classification table, a histogram of observed groups and predicted probabilities, as well as the model chi-square were all used to examine goodness of fit. Key points of the classification table and histogram were: (a) the percent predicted classification for the four groups and (b) the overall percent of correctly predicted classifications compared to the baseline predictors that all cases belong to the group where the event occurred or did not occur (Hair et al., 1998).

**Procedures for Entering Explanatory Variables**

The backward elimination method of entry was chosen for this question. The backward elimination method of selecting variables in the regression model starts by including all independent variables in the model and then eliminating those variables that do not significantly contribute to the prediction (Hair et al., 1998).

**Question 3.** Is there a difference in successful closures (Status 26) and the reasons for unsuccessful closures for African Americans with EBD when compared with other consumers based on race?
Variables. The explanatory variable is race (categorical and multichotomous with four levels) and the criterion was successful closure (categorical and dichotomous).

Sample test statistic. Logistic regression will be used to investigate the likelihood of successful closure for VR services (Status 26). Logistic regression is the appropriate statistical technique to use to predict a dichotomous criterion variable from a set of explanatory variables (Hair, et al., 1998).

Results will provide estimates of the probability of an event occurring (being successfully closed) and will range from 0 to 1. Estimates greater than .50 indicates the probability the event will occur in the population (being successfully closed), whereas a probability of less than .50 indicate that the event is unlikely to occur in the population (unsuccessful closure). The regression coefficient (b) is interpreted as the logarithm “odds ratio” associated with a one-unit change in the explanatory variable (race), but it can be difficult to interpret. The researcher can conclude there is no association between the variables when an odds ratio is 1.0. The researcher will need to use the Exp (B). The higher the exponent score, the greater the likelihood the event (successful closure) will occur.

When b(regression coefficient for the explanatory variables) is positive, the value of the Exp (B) is greater than 1 and the odds are greater that the event will occur. When b is negative, the Exp (B) will be less than 1, indicating that the odds are decreased that the event will happen. When b is zero, the value of Exp (B) is 1, indicating the odds are unchanged (SPSS, 2000).
Wald statistic. The Wald test statistic is used to determine if the probability of an event happening is significant (being successfully closed). In addition, the model chi-square test statistic is used to test the statistical null hypothesis \( H_0: b \text{ (race) } = 0 \) that the logistic regression coefficients for all the terms in the model, except the constant \( (b_0) \) are 0. The model chi-square is comparable to the overall \( F \) test (Hair et al., 1998). The \( R \) (partial correlation) was also used to assess the contribution of the explanatory variables \( (b) \) in predicting whether or not the event will happen, for example, being successful rehabilitated (Hair et al., 1998). It is important to note, the \( R \) statistic is analogous to the \( r \) statistic in multiple regression. Furthermore, the \( R \)-value is a partial correlation between the explanatory variables and the criterion variables, more specifically; it describes the contribution (correlation) of each explanatory variable in the regression equation. Small values of \( R \) indicate that the explanatory variable (race) 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 happening. A negative value of \( R \) indicates that as the value of the explanatory variable increases, there will be a decrease in the likelihood of the event happening (unsuccessful closure).

Goodness of Fit. It answers the question, how well does fit the model? A classification table and a histogram of observed versus predicted probabilities is one way to assess the goodness of fit. The classification table displays the predicted and observed outcomes (successful or unsuccessful closure). The histogram displays a graph of the observed group and estimated probabilities for each case. Thus, the
classification table, a histogram of observed groups and predicted probabilities, as well as the model chi-square were all used to examine goodness of fit. Key points of the classification table and histogram were: (a) the percent predicted classification for the four groups and (b) the overall percent of correctly predicted classifications compared to the baseline predictors that all cases belong to the group where the event occurred or did not occur (Hair et al., 1998).

Procedures for Entering Explanatory Variables

The backward elimination method of entry was chosen for this question. The backward elimination method of selecting variables in the regression model starts by including all independent variables in the model and then eliminating the variables that do not contribute to the significance of the predictor (Hair et al., 1998).

Question 4. Is there a difference in the types of services received by African Americans with EBD at closure (Status 26) when compared with other consumers based on race?

Variables. The explanatory variable is race (categorical and multichotomous with four levels) and the criterion variable is types of services (categorical and dichotomous). Coding is 0 = did not receive the service or 1 = did receive the service.

Sample test statistic. The chi-square test of independence and the phi coefficient will be the test statistic used to analyze whether or not there is a relationship between race and the type of services received at closure (Status 26). “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 the researchers conclude that the groups do not differ” (Fraenkel & Wallen, 1993, p.201).

Summary

This chapter has explained the methodology used for this study. Chapter IV will address the problem statement and report the findings for the study as it pertains to each research question.
CHAPTER 4

RESULTS

INTRODUCTION

This chapter describes the results from the statistical analysis of African Americans consumers with EBD who sought vocational rehabilitation (VR) services nationally through the public rehabilitation system for the fiscal year 2002. The analysis of data consisted of descriptive and inferential statistics that examined the relationship between consumer race and VR outcomes.

Research Questions

Is there a difference in the vocational rehabilitation (VR) outcomes of African Americans consumers with emotional and behavioral disorders (EBD) based on race, age, gender, and education level?

Operationally, the research questions pertaining to VR outcomes of consumers based on race and emotional and behavioral disabilities are:

Question 1. Is there a difference in hourly wages at closure, hourly wage change between application and closure, total case expenditures, days spent receiving services,
and weekly hours at closure for African American consumers with EBD when compared with other consumers based on race, age, sex, and educational level?

**Question 2.** Is there a difference in the type of closure, reasons for closure, and work status at closure (status 26) for African Americans with EBD when compared to other consumers based on race, age, gender, and educational level at application?

**Question 3.** Is there a difference in successful closures (Status 26) and the reasons for unsuccessful closures for African Americans with EBD when compared with other consumers based on race?

**Question 4.** Is there a difference in the types of services received by African Americans with EBD at closure (Status 26) when compared with other consumers based on race?

**Description of the Sample**

The RSA 911 national data tape obtained from the Rehabilitation Services Administration was utilized for this study. The national database included 650,000 consumers who sought VR services for the fiscal year 2002 (October 1, 2001 through September 30, 2002). Those cases with a primary mental health disability codes (RSA, 2002) of 1807 (Attention-deficit/hyperactive disorder), 1815 (Depressive and other mood disorders), and 1824 (Mental illness, not specified elsewhere) were selected out. The sampling frame (after removing all missing records) was N = 36,307. After combining American Indian, Asian and Hawaiian together in one race category called “Other Race”, there were four race categories. Together with the respective sample size, there were 27,523 European Americans; 6,824 African Americans; 1,202 Hispanics,
and 758 Other Race. A proportional sample was taken of consumers from each racial category. A subsample was used to allow for an adequate number of consumers from each racial minority group that made up a small percentage of the total sample (i.e., Native Americans and Asian Americans). A sample of 400 cases from each of the four race categories was randomly selected, which resulted in a final sample of 1,600 cases. Of the 1,600 cases, 59.5% were female and 40.5% were male. The average age of a consumer in the sample was 38 years old, with Hispanics having a slight variance in age of 36 years old.

Educational Level at Application

The average educational level at application for the sample was high school graduate or GED. By race, the majority of the consumers fell in the three top educational categories. For African Americans the top three categories were: (a) 44.5% were High School Graduates or had a GED, (b) 25% were in Grades 9 to 12, no diploma, and (c) 15.8% had a Post Secondary Education, no degree. For European Americans the following educational breakdown was: (a) 43.8% were High School Graduates or had a GED, (b) 18.5% were in Grades 9 to 12, no diploma, and (c) 17.8% had a Post Secondary Education, no degree. For Hispanic Americans the following educational breakdown was: (a) 40.8% were High School Graduates or had a GED, (b) 25.3% were in Grades 9 to 12, no diploma, and (c) 13.5% were in Grades 1 to 8. Finally, Other Race group had the following top three categories: (a) 29.8% were High School Graduates or had a GED, (b) 20.8% were in Grades 9 to 12, no diploma, and (c)
20.5% had a Post Secondary Education, no degree. The overall education level at application is presented in Table 4.1.

<table>
<thead>
<tr>
<th>Educational level</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School graduate or GED</td>
<td>635</td>
<td>39.7</td>
</tr>
<tr>
<td>Grades 9 to 12, no diploma</td>
<td>358</td>
<td>22.4</td>
</tr>
<tr>
<td>Post secondary education, no degree</td>
<td>260</td>
<td>16.3</td>
</tr>
<tr>
<td>Grades 1 to 8</td>
<td>115</td>
<td>7.2</td>
</tr>
<tr>
<td>Associate degree or vocational Certificate</td>
<td>78</td>
<td>4.9</td>
</tr>
<tr>
<td>Bachelors degree</td>
<td>73</td>
<td>4.6</td>
</tr>
<tr>
<td>Special Education</td>
<td>35</td>
<td>2.2</td>
</tr>
<tr>
<td>Masters degree or higher</td>
<td>24</td>
<td>1.5</td>
</tr>
<tr>
<td>No formal schooling</td>
<td>21</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Table 4.1 Educational Level of the Sample

Presentation of Results

Each section is grouped and presented in the following sequence: (a) research question, (b) descriptive statistics of the sample, (c) type of test statistic used to analyze the data from the sample, and (d) the results of the analyses.

Question 1.

Is there a difference in hourly wages, hourly wage change between application and closure, total case expenditures, case opening duration, weekly earnings at closure for consumers with EBD based on race, age, sex, and educational level?
Presented in Table 4.2 are the descriptive statistics European Americans (n = 400), African Americans (n= 400), Hispanics (n = 400), Other race (n= 400) and the variables of age, sex, and educational level at application. The criterion variables used for this question are hourly wages at closure, hours worked weekly at closure, hourly wage change, total case expenditures, and case opening duration. The findings are summarized in Table 4.2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1600</td>
<td>19</td>
<td>71</td>
<td>38.08</td>
<td>11.417</td>
</tr>
<tr>
<td>Race (1,2,3,4)</td>
<td>1600</td>
<td>1</td>
<td>4</td>
<td>2.50</td>
<td>1.118</td>
</tr>
<tr>
<td>Total Case Expenditures</td>
<td>1600</td>
<td>0</td>
<td>$54,250</td>
<td>$1,320.75</td>
<td>3031.807</td>
</tr>
<tr>
<td>Hours Worked per Week</td>
<td>1600</td>
<td>0</td>
<td>70</td>
<td>9.92</td>
<td>16.149</td>
</tr>
<tr>
<td>Hourly Wages</td>
<td>1600</td>
<td>.00</td>
<td>$42.18</td>
<td>$2.5981</td>
<td>4.53290</td>
</tr>
<tr>
<td>Hourly Wage Change</td>
<td>1571</td>
<td>-25.70</td>
<td>$42.18</td>
<td>$1.6188</td>
<td>4.68672</td>
</tr>
<tr>
<td>Total Days on Services</td>
<td>1600</td>
<td>0</td>
<td>4,079</td>
<td>382.91</td>
<td>463.720</td>
</tr>
</tbody>
</table>

Note: 1=Whites; 2 = Black; 3 = Hispanic; 4 = Other Race;  Male: n = 648; Female: n = 952

Table 4.2: Means and Standard Deviations of Variables
The method used to analyze the relationship among the dependent variables (hourly wages, hourly wage change, total case expenditures, days spent receiving services, weekly earnings at closure) and the independent variables (race, sex, age, educational level at application) was multivariate analysis of covariance (MANCOVA). An alpha level of .05 was used to conclude significance for the Wilks’ Lambda multivariate test. MANCOVA assumes that for each group (each cell in the factor design matrix) the covariance matrix is similar. The Box’ M was used to test this assumption and the results showed the test was significant (a = .05), thus this assumption was violated. That is, the various groups differ in their covariance matrices. However, the F-test (F = 4.589) is quite robust even when there are departures from this assumption. Also, the p-values associated with the F-test showed that the results were still valid. MANCOVA also assumes that the dependent variables have similar variance across the groups of the independent variables. The Levene’s test was used to test this assumption and revealed small significant levels (.000), less than .05, thus this assumption was not satisfied. However, the F-test in MANCOVA is quite robust even when there are departures from this assumption.

For each main effect factor (age, race) and interaction factor (sex*race), the Wilks’ Lambda was used test whether the factor has significant effect simultaneously on the dependent variables. After running the model, the following factors had a significant effect simultaneously on the dependent variables: age, race, and sex*race. The researcher, re-ran the MANCOVA using only age, race, sex, and the interaction of
sex*race. The Wilks’ Lambda test showed race (.000) and age (.005) had a significant effect simultaneously on the dependent variables. Then researcher took out the factor “sex” and the interaction term sex*race and refitted the MANCOVA model. Results pertaining to new model fit (Wilks’ Lambda = .989; F =3.415; p = .004), factors race (.000) and age (.004) had significant simultaneous effects on the dependent variables. Specifically, when looking at hourly wages at closure, hours worked per week at closure, hourly wage change between application and closure, total case expenditures, and days spent on case services as five aspects of the service outcome, age and race have a statistically significant effect on them. The means of the dependent variables differ among different races after adjusting for the effect of age. Sex and educational level at application were not justified to have a significant simultaneous effect of all of the five dependent variables and thus they were not included in the model. The final model included the predictors of race and age that were found to be significantly significant.

The Test of Between-Subjects revealed that only two race categories (African Americans and Hispanics) and age of a consumer had an effect of the dependent variables, total days spent receiving services and total case expenditures. The Test of Between–Subjects effects indicated specifically on which dependent variables (hours worked per week at closure, hourly wages at closure, hourly wage change between application and closure, total case expenditures, and total days spent receiving) the effect of a factor is significant. Significance of each parameter coefficient was revealed from the parameter estimates.
The parameter estimates showed that for “total days spent receiving services,” the parameter associated with age and race (Black and Hispanic) are both significant. For “total case expenditures,” the parameter associated with age and race (Hispanic) are both significant. None of the other parameters were significant. Therefore, this researcher can conclude that the race of consumers with EBD makes a difference in the total number of days they receive VR services. On average, the total number of days spent on VR services for African Americans consumers with EBD is 78.6 days shorter than for other race group. The total days spent receiving services for Hispanic Americans is 200.9 days less than those for Other Race group. The parameter of age for total days spent on services was significant and was positive 2.460, which suggests that on average when age is increased by 1, total days spent receiving services will increase by 2.46 days. Results are summarized in Table 4.3.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>B</th>
<th>S.E.</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>366.109</td>
<td>45.645</td>
<td>8.021</td>
<td>.000</td>
</tr>
<tr>
<td>Age</td>
<td>2.460</td>
<td>1.014</td>
<td>2.426</td>
<td>.015*</td>
</tr>
<tr>
<td>European American</td>
<td>-2.647</td>
<td>32.799</td>
<td>-0.081</td>
<td>.936</td>
</tr>
<tr>
<td>African American</td>
<td>-78.605</td>
<td>32.800</td>
<td>-2.397</td>
<td>.017*</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>-200.907</td>
<td>32.823</td>
<td>-6.121</td>
<td>.000*</td>
</tr>
</tbody>
</table>

(*) Denotes significance at p < .05.

Table 4.3 Parameter Estimates of MANCOVA
On average, the total case expenditures for Hispanic Americans is $559.36 less than that for Other Race. Also, the parameter of age for total case expenditures was significant and was positive 17.264, which suggests that on average when age is increased by 1, total case expenditures will increase by $17.264. For other dependent variables, no significant differences were found for the different race groups. Results are summarized in Table 4.4.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>B</th>
<th>S.E.</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>959.266</td>
<td>303.435</td>
<td>3.161</td>
<td>.002</td>
</tr>
<tr>
<td>Age</td>
<td>17.264</td>
<td>6.740</td>
<td>2.562</td>
<td>.011*</td>
</tr>
<tr>
<td>European American</td>
<td>-202.001</td>
<td>218.039</td>
<td>-.926</td>
<td>.354</td>
</tr>
<tr>
<td>African American</td>
<td>-323.418</td>
<td>218.041</td>
<td>-1.438</td>
<td>.138</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>-559.356</td>
<td>218.198</td>
<td>-2.564</td>
<td>.010*</td>
</tr>
</tbody>
</table>

(*): Denotes significance at p=<.05.

Table 4.4 Parameter Estimates for Total Case Expenditures
Pairwise comparisons were used to show the difference for the means between two different race types for each dependent variable. The mean differences are significant at a .05 level. For the marginal mean of total days spent receiving services, race (White) and race (African American and Hispanic) are significantly different from each other. The total days spent receiving services for European Americans is on average somewhere between 111.95 to 139.97 days longer than that for African Americans and 134.17 to 262.346 longer for Hispanics, given all other variables are held constant.

African American, Hispanic American, and Other Race are significantly different from each other. The total days spent receiving services for African Americans is on average somewhere between 58 to 186 days longer than that for Hispanic Americans and between 143 to 14 days less than Other Race group.

<table>
<thead>
<tr>
<th>Race</th>
<th>Race</th>
<th>Mean Difference</th>
<th>S.E.</th>
<th>Sig</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA</td>
<td>AFAM</td>
<td>75.959</td>
<td>32.634</td>
<td>.020</td>
<td>111.949</td>
<td>139.696</td>
</tr>
<tr>
<td></td>
<td>HA</td>
<td>198.260</td>
<td>32.672</td>
<td>.000</td>
<td>134.175</td>
<td>262.346</td>
</tr>
<tr>
<td>AFAM</td>
<td>HA</td>
<td>122.302</td>
<td>32.636</td>
<td>.000</td>
<td>58.286</td>
<td>186.317</td>
</tr>
<tr>
<td></td>
<td>Other Race</td>
<td>-78.605</td>
<td>32.800</td>
<td>.017</td>
<td>-142.941</td>
<td>-14.270</td>
</tr>
<tr>
<td>HA</td>
<td>Other Race</td>
<td>-200.907</td>
<td>32.823</td>
<td>.000</td>
<td>-265.289</td>
<td>-136.525</td>
</tr>
</tbody>
</table>

Table 4.5 Pairwise Comparison of Total Days Receiving Services
For the marginal mean of total case expenditures, race (Hispanic) and race (Other Race) are significantly different from each other. Total case expenditures for Hispanic Americans is on average somewhere between $987.348 to $131.364 less than that for Other Race.

<table>
<thead>
<tr>
<th>Race</th>
<th>Race</th>
<th>Mean Difference</th>
<th>S.E.</th>
<th>Sig</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA</td>
<td>Other</td>
<td>-559.356</td>
<td>218.198</td>
<td>.010</td>
<td>-987.348</td>
<td>-131.364</td>
</tr>
<tr>
<td>Other</td>
<td>HA</td>
<td>559.356</td>
<td>218.198</td>
<td>.010</td>
<td>131.364</td>
<td>987.348</td>
</tr>
</tbody>
</table>

Table 4.6 Pairwise Comparison for Total Case Expenditures

For the marginal mean of hourly wages at closure, race (White) and race (Black) are significantly different from each other. Hourly wages at closure for European Americans is on average somewhere between $.54 cent to $1.33 more than that for African Americans.

<table>
<thead>
<tr>
<th>Race</th>
<th>Race</th>
<th>Mean Difference</th>
<th>S.E.</th>
<th>Sig</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA</td>
<td>AFAM</td>
<td>.691</td>
<td>.325</td>
<td>.034</td>
<td>.054</td>
<td>1.327</td>
</tr>
<tr>
<td>AFAM</td>
<td>EA</td>
<td>-.691</td>
<td>.325</td>
<td>.034</td>
<td>-1.327</td>
<td>-.054</td>
</tr>
</tbody>
</table>

Table 4.7 Pairwise Comparison for Hourly Wages at Closure
Question 2.

Is there a difference in the type of closure, reasons for closure, and work status at closure based on race, age, gender, and educational level at application for African Americans with EBD when compared to other ethnic groups?

The method used to examine the relationship between the service outcomes and race, age, sex, and educational level at application was multiple logistic regression. Three separate regression equations were used to test whether the differences in type of closures, reasons for closure, and work statuses at closure could be explained by race, age, sex, and educational level at application. The researcher had a choice of using either the backward elimination or the stepwise forward estimation. These are two of the most common methods used when determining the “best” predictive model of logistic regression (Hair et al., 1995). This researcher used the backward elimination method, which allowed the researcher to enter all the predictor variables of interest, then the ability to delete those independent variables that did not contribute significantly to the equation (Hair et al., 1995, p. 58). The advantage of this method is that it allows the researcher to examine all variables of interest and their contribution to the regression model. The alpha level of significance was set at 0.05.

Summary of Logistic Regression Results

Three logistic regression equations were computed for the independent variables under investigation. The first regression model (model 1) provided information on the relationship between type of closure and race, age, gender, and educational level at
application. The regression analysis can be explained by the following equation: \( g(x) = b_1 \text{(race)} + b_2 \text{(age)} + b_3 \text{(gender)} + b_4 \text{(educational level at application)} \).

The final model fitting for Model 1 (including only race and educational level at application) was significant \((p = 0.000)\) which suggests that the logistic model is significant or the independent factors (race and educational level at application) have significant effects on the dependent variable (type of closure).

The results from the Goodness-of-Fit test showed that the multiple logistic model is significant. The Nagelkerke \(R^2\) number is small \((r = .098)\), which suggest that not much variation of the dependent variable could be explained by the factors.

The likelihood ratio test shows whether the individual factors have significant effect on the dependent variable. Since the significant level for both race and educational level at application (.005, .020, respectively) are less than 0.05, these two factors have significant effect on the dependent variable individually, while “age” and “sex” do not. Since the age and sex were not significant, they were not included in the model. The logistic regression summary is presented in Table 4.8.
Logistic Regression: Type of Closure (Model 1)

(n=1,600)

<table>
<thead>
<tr>
<th>Variable</th>
<th>(b )</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>App., before eligibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic American</td>
<td>.905</td>
<td>.217</td>
<td>17.426</td>
<td>.000*</td>
</tr>
<tr>
<td>Grades 1 to 8</td>
<td>3.347</td>
<td>1.266</td>
<td>6.987</td>
<td>.008*</td>
</tr>
<tr>
<td>Employed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European American</td>
<td>.427</td>
<td>.187</td>
<td>5.198</td>
<td>.023*</td>
</tr>
<tr>
<td>After services w/o employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assoc degree or voc cert</td>
<td>-1.425</td>
<td>.656</td>
<td>4.721</td>
<td>.030*</td>
</tr>
</tbody>
</table>

Model Chi-square=155.121; df 72, p=<.000; S.E. =standard error; Parameter estimates = (b)
(*) : Denotes significance at p=< .05.

Table 4.8 Summary of logistic regression coefficients.

| 95% CI for Exp(B) |
|-------------------|-----------------|-----------------|
| Variable          | Exp(B) | Lower | Upper |
| App., before eligibility |      |      |      |
| Hispanic American | 2.472  | 1.616 | 3.781 |
| Grades 1 to 8     | 28.410 | 2.375 | 339.819 |
| Employed          |      |      |      |
| European American | 1.532  | 1.062 | 2.211 |
| After serv. w/o employment          |      |      |      |
| Assoc degree or voc cert | .241  | .067 | .870 |

Table 4.9 Confidence interval for Odd Ratios
Summary

Log (Probability of being in one type of closure/ (1- Probability of not ending in that type of closure) is affected by different levels of race and educational level at application. The effect of being Hispanic American is significant and increases the odds of being closed from application, before eligibility by a factor of 2.472. The effect of being European American is significant and increases the odds of having their cases closed with employment outcomes by a factor of 1.532. Educational level 1 at application (grades 1 to 8) is significant and increases the odds of having their cases closed from application, before eligibility by a factor of 28.41. Educational level 6 or Associate degree/vocational certificate at application is significant and decreases the odds of having their cases closed after services, without employment by a factor of .241.

The second regression model (model 2) provided information on the relationship between reason for closure and race, age, gender, and educational level at application. The regression analysis can be explain by the following equation: \( g(x) = b_1 \cdot \text{race} + b_2 \cdot \text{age} + b_3 \cdot \text{gender} + b_4 \cdot \text{educational level at application}. \)

The likelihood ratio test shows whether the individual factor and covariate has significant effect on the dependent variable. Since the significant levels for age, sex, and race were less than 0.05, these factors have a significant effect on the dependent variable individually, while educational level at application does not.

In the logistic regression model, the dependent variable is the nature logarithm of the odds ratio, where odds ratio is defined to be “probability of success/(1-probability of success). For instance, employed at closure, in the logistic regression process it is
being analyzed how the log (probability of being employed at closure/ (1-probability of being not employed at closure) is affected for the different levels of the factors. And the “probability of being not employed at closure / (1-probability of being employed a closure) here is defined to be the odds ratio of being employed at closure”.

Whenever Exp(B) is larger than one, the corresponding factor level will increase the probability of the dependent variable happening; whenever Exp(B) is less than one, the corresponding factor level will decrease the probability of the dependent variable happening.

Race (European American) is the factor that has a significant parameter when looking at the reason for closure, “employed.” It suggests that when other factors are held constant, being European American will increase the odds of being employed at closure by a factor of 2.035 when compared with “other race” group. Although the researcher cannot specify the amount of the difference in probability of being employed at closure for these different races, they can be put in rank order. The probability of being employed at closure is largest for European Americans, then African Americans, Other Race, and Hispanic Americans being last.

The logistic regression summary is presented in Tables 4.10 and 4.11.
### Logistic Regression: Reason for Closure (Model 2)

(n=1,600)

<table>
<thead>
<tr>
<th>Variable</th>
<th>(b )</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European American</td>
<td>.701</td>
<td>.298</td>
<td>5.701</td>
<td>.017</td>
</tr>
<tr>
<td>Unable to locate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic American</td>
<td>-.553</td>
<td>.279</td>
<td>3.919</td>
<td>.048</td>
</tr>
<tr>
<td>Disability too significant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.040</td>
<td>.017</td>
<td>5.749</td>
<td>.016</td>
</tr>
<tr>
<td>Refused Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.021</td>
<td>.009</td>
<td>5.141</td>
<td>.023</td>
</tr>
<tr>
<td>European American</td>
<td>.675</td>
<td>.310</td>
<td>4.728</td>
<td>.030</td>
</tr>
<tr>
<td>Individual in Institution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.604</td>
<td>.470</td>
<td>11.631</td>
<td>.001</td>
</tr>
</tbody>
</table>

Model Chi-square=171.234; df 65, p=<.000; S.E. = standard error; Parameter estimates = (b)

Significant at p=< .05.

Table 4.10: Summary of logistic regression coefficients.
The probability of ending in one type of reason for closure/1 - probability of not ending in that reason for closure is affected by different levels of age, sex, and race. The effect of being European American is statistically significant and increases the odds of being “Employed” as the reason for closure by a factor of 2.035. The effect of being Hispanic American is statistically significant and decreases the odds of being “Unable to locate” as the reason for closure by a factor of 0.575. The age of a consumer is statistically significant and increases the odds of having the reason for closure, “Disability too significant” and “Refused services” a factor of 1.040, 1.963, respectively. The effect of being European American is statistically significant in
increasing the odds of being closed “Refused service” by a factor of 1.963. The effect of being male is statistically significant in increasing the odds of having the reason for closure, “Individual in an institution” by a factor of 4.974.

The third regression model (model 3) provided information on the relationship between work status at closure and race, age, gender, and educational level at application. The regression analysis can be explained by the following equation: \( g(x) = b_1 \text{race} + b_2 \text{age} + b_3 \text{gender} + b_4 \text{educational level at application} \).

The likelihood ratio test shows whether the individual factors and covariate has significant effect on the dependent variable. Since the significance level for race was less than 0.05, this factor has a significant effect on the dependent variable individually, while age, sex, and “educational level at application” do not.

In the logistic regression model, the dependent variable is the natural logarithm of the odds ratio, where odds ratio are defined to be “Probability of success/(1-probability of success). For instance, employment status at closure = 0 (Unemployed), in the logistic regression process, it is being analyzed how \( \log (\text{Probability of being not employed at closure})/(1-\text{Probability of being not employed at closure}) \) is affected for the different levels of the factors. And “probability of being not employed at closure / (1-Probability of being not employed at closure)” here is defined to be the odds ratio of being not employed at closure”.

Whenever \( \exp(B) \) is larger than one, the corresponding factor level will increase the probability of the dependent variable happening; whenever \( \exp(B) \) is less than one,
the corresponding factor level will decrease the probability of the dependent variable happening.

Race (Black and Hispanic) are the two factor levels which have significant parameters when looking at “work status at closure = 0 (Unemployed)”. It suggests that when other factors are fixed or held constant, being African American increases the odds of being unemployed at closure by a factor of 2.493. Being Hispanic American increases the odds of being unemployed at closure by a factor of 5.442 when compared with “Other Race.” Although the researcher cannot specify the amount of the difference in probability of being unemployed at closure for these different races, they however can be put in rank order. The probability of being unemployed at closure is largest for Hispanics, then Blacks, Other Race, and Whites is the smallest. The differences between Other Race and Whites were not significant.

African Americans and Hispanic Americans are the two factor levels that have significant parameters when looking at employment status at closure being “employed without support.” It suggests that when other factors are fixed, being African American increases the odds of being employed without supports at closure by a factor of 3.143 when compared with “Other Race.” Being Hispanic American increases the odds of being employed at closure by a factor of 8.550 when compared with “Other Race.” Although the researcher cannot specify the amount of the difference in probability of being unemployed at closure for these different races, they can be put in rank order. The probability of being employed without supports at closure is largest for Hispanic,
second largest for Black, Other Race is third, and White is the smallest, while the difference between Other Race and White was not significant.

Race (Hispanic) is the only factor level that has a significant parameter when looking at employment status at closure, “self-employment (not BEP).” It suggests that when other factors are fixed or held constant, being Hispanic increases the odds of being self-employed (not BEP) at closure by a factor of 11.800 when compared with “Other Race.” Although the researcher cannot specify the amount of the difference in probability of being self-employed (not BEP) at closure for these different races, they can be put in rank order. The probability of being self-employed at closure is largest for Hispanic, second largest for Black, Other Race is third, and White is the smallest, while the differences between Other Race, Black, and White was not significant. The logistic regression summary is presented in Tables 4.12 and 14.13.
Logistic Regression: Employment Status (Model 3)

\( n = 1,600 \)

<table>
<thead>
<tr>
<th>Variable</th>
<th>(b)</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unemployed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>.914</td>
<td>.435</td>
<td>4.063</td>
<td>.044</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>1.694</td>
<td>.629</td>
<td>7.244</td>
<td>.007</td>
</tr>
<tr>
<td><strong>Employed w/o supports</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>1.145</td>
<td>.469</td>
<td>5.961</td>
<td>.015</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>2.146</td>
<td>.640</td>
<td>11.256</td>
<td>.001</td>
</tr>
<tr>
<td><strong>Self-employment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic American</td>
<td>2.468</td>
<td>1.068</td>
<td>5.345</td>
<td>.021</td>
</tr>
</tbody>
</table>

Model Chi-square = 58.588; df 24, \( p < .000 \); S.E. = standard error; Parameter estimates = (b)

Significant at \( p < .05 \).

Table 4.12 Summary of logistic regression coefficients.
95% CI for Exp (B)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Exp(B)</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>2.493</td>
<td>1.026</td>
<td>6.061</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>5.442</td>
<td>1.585</td>
<td>18.685</td>
</tr>
<tr>
<td>Employed w/o supports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>3.143</td>
<td>1.253</td>
<td>7.882</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>8.550</td>
<td>2.441</td>
<td>29.954</td>
</tr>
<tr>
<td>Self-employment (BEP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic American</td>
<td>11.800</td>
<td>1.456</td>
<td>95.632</td>
</tr>
</tbody>
</table>

Table 4.13  Confidence Interval for Odd Ratios

Summary

The probability of being in one category of Employment Status at closure/ (1-Probability of being not in that category of Employment Status at closure) affected by different levels of race.

The effect of being Black is statistically significant in increasing the odds of being “unemployed” at closure by a factor of 2.493 and increases the odds of being “employed” without supports at closure by a factor of 3.143. The effect of being Hispanic is statistically significant, increasing the odds of being “unemployed” at closure by a factor of 5.442, being “employed without supports” at closure by a factor of 8.550, and being self-employed (not BEP) at closure by a factor of 11.800.
Question 3. Is there a difference in successful closures (Status 26) and unsuccessful closures for African Americans with EBD when compared with other consumers based on race?

The method used to examine successful closures for African Americans compared to other racial/ethnic groups was logistic regression. The backward elimination method was used for this question because it allowed the researcher to examine contribution of all variables of interest.

African Americans (n = 400), European Americans (n = 400), Hispanic Americans (n = 400), Other Race (n = 400) was the predictor variable and being successfully closed was the criterion variable in the regression model. All classifications were measured relative to the 72.4 percent baseline of VR.

Summary of Logistic Regression Results

All variables were added simultaneously in the logistic regression equation and race was found to have a significant effect on closure type. The overall prediction rate did not change from the baseline of 72.4 percent. The observed and expected numbers of the Hosmer and Lemeshow goodness-of-fit statistic has a p-value = 1.000, which is computed from the chi-square distribution with 2 degrees of freedom and indicates that the logistic model is a good fit. The total regression model explained very little variance of successful closure (Nagelkerke statistic is .008: explaining the total variance in the model). The Wald statistic tested the significance of each of the covariate and dummy independent variables in the model. Race was significant as a variable, but only European American is significant individually. The odds ratio of 1.48 associated with
for race (white), indicates the odds of successful closure has a 41.8% increase (1.418-1).

Note: Odds ratio = probability of successful closure/ (1 – probability of successful closure), and it increases when probability of successful closure increases.

The researcher concluded that race type has significant effect on closure type (successful or unsuccessful). African Americans, Hispanic Americans, and Other Race do not have a significant effect on closure type individually, but European Americans do. Furthermore, being European American tends to be associated with high successful closure probability when compared to Other Race. The logistic regression summary is presented in Table 4.14.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(b )</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>European American</td>
<td>.349</td>
<td>.156</td>
<td>5.023</td>
<td>.025*</td>
<td>1.418</td>
</tr>
<tr>
<td>African American</td>
<td>.039</td>
<td>.160</td>
<td>.058</td>
<td>.810</td>
<td>1.039</td>
</tr>
<tr>
<td>Hispanics</td>
<td>-0.93</td>
<td>.163</td>
<td>.325</td>
<td>.568</td>
<td>.911</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.046</td>
<td>.114</td>
<td>84.198</td>
<td>.000</td>
<td>.351</td>
</tr>
</tbody>
</table>

Model Chi-square=9.121; df 3, p=<.028; S.E. =standard error; Parameter estimates = (b)
(*) Denotes significance at p=< .05.

Table 4.14: Summary of logistic regression coefficients.
Question 4. Is there a difference in the types of services received by African Americans with EBD at closure (Status 26) when compared with other consumers based on race?

The method used to examine the type of services received by Africans Americans when compared to other consumers was the chi-square test of independence. Although services for African Americans are presented in Table 4.15, an independent chi-square was run for each service. The phi coefficient was used to measure the association between the explanatory and criterion variables. There were six common services that benefited African Americans with EBD when compared with other racial/ethnic groups. Results are summarized in Table 4.15.
<table>
<thead>
<tr>
<th>Type of Services</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic/Assessment</td>
<td>.052</td>
</tr>
<tr>
<td>Restoration</td>
<td>.464</td>
</tr>
<tr>
<td>College/University Training</td>
<td>.004*</td>
</tr>
<tr>
<td>Business/Vocational Training</td>
<td>.003*</td>
</tr>
<tr>
<td>On-the-job Training</td>
<td>.671</td>
</tr>
<tr>
<td>Miscellaneous Training</td>
<td>.303</td>
</tr>
<tr>
<td>Substantial Counseling</td>
<td>.005*</td>
</tr>
<tr>
<td>Job Finding</td>
<td>.326</td>
</tr>
<tr>
<td>Job Placement</td>
<td>.122</td>
</tr>
<tr>
<td>Transportation</td>
<td>.000*</td>
</tr>
<tr>
<td>Maintenance</td>
<td>.001*</td>
</tr>
<tr>
<td>Other Services</td>
<td>.424</td>
</tr>
</tbody>
</table>

**p < .05. Note: (*) denotes significance.

Table 4.15  Type of Services Received by African Americans
Research Questions

Question 1. Is there a difference in hourly wages at closure, hourly wage change between application and closure, total case expenditures, days spent on services, and weekly hours at closure for African American consumers with EBD when compared with other consumers based on race, age, sex, and educational level?

Question 2. Is there a difference in the type of closure, reasons for closure, and work status at closure (status 26) for African Americans with EBD when compared to other consumers based on race, age, gender, and educational level at application?

Question 3. Is there a difference in successful closures (Status 26) and unsuccessful closures for African Americans with EBD when compared with other consumers based on race?

Question 4. Is there a difference in the types of services received by African Americans with EBD at closure (Status 26) when compared with other consumers based on race?

The following section will provide a conclusion for the results that were found from this study as well as recommendations for future studies.
CHAPTER 5

SUMMARY AND RECOMMENDATIONS

This section will elaborate on the interpretation of results found for this study. In addition, this chapter will discuss limitations of this study, future research areas, and implications. The purpose of this study was to determine if biases exist in the VR service outcomes for African American consumers with a primary mental health (emotional and behavioral) disability when compared with other consumers based on race, age, sex, and educational level at application for consumers who sought services nationally for the federal fiscal year 2002 (FFY02). There were four research questions used for this study. The four research questions for the study were:

1. Is there a difference in hourly wages at closure, hourly wage change between application and closure, total case expenditures, days spent on services, and weekly hours at closure for African American consumers with EBD when compared with other consumers based on race, age, sex, and educational level?

2. Is there a difference in the type of closure, reasons for closure, and work status at closure (status 26) for African Americans with EBD when compared to other consumers based on race, age, gender, and educational level at application?
3. Is there a difference in successful (Status 26) and unsuccessful closures for African Americans with EBD when compared with other consumers based on race?

4. Is there a difference in the types of services received by African Americans with EBD at closure (Status 26) when compared to other consumers based on race?

Summary

National archival data collected by the Rehabilitation Services Commission on all 50 states was used for this study. The participants were all consumers who sought public vocational rehabilitation (VR) services during the federal fiscal year 2002 (October 1, 2001 to September 30, 2002). Those cases with a primary mental health disability codes (RSA, 2002) of 1807 (Attention-deficit/hyperactive disorder), 1815 (Depressive and other mood disorders), and 1824 (Mental illness, not specified elsewhere) were selected out. The sampling frame (after removing all missing records) was N = 36,307. After combining American Indian, Asian and Hawaiian together into one race category called “Other Race”, there were four race categories. Together with the respective sample size, there were 27,523 European Americans; 6,824 African Americans; 1,202 Hispanics, and 758 Other Race. A proportional sample was taken of consumers from each racial category. A subsample was used to allow for an adequate number of consumers of racial minority groups that made up a small percentage of the total sample (i.e., Native Americans and Asian Americans). A sample of 400 cases
from each of the four race categories was randomly selected, which resulted in a final sample of 1,600 cases.

Descriptive statistics, MANCOVA, multiple regression, logistic regression, and chi square test of independence were conducted to analyze the data and test the association between the variables race, age, sex, educational level at application and VR outcomes. The results of this study will be addressed by each research question.

**Summary by Research Questions**

**Question 1.** Is there a difference in hourly wages at closure, hourly wage change between application and closure, total case expenditures, days spent on services, and weekly hours at closure for African American consumers with EBD when compared with other consumers based on race, age, sex, and educational level?

MANCOVA was used to ascertain whether there was a significant relationship between race (African Americans and Hispanics), age and total days spent on services, as well as age and total case expenditures. The results of this study showed that African Americans and Hispanic Americans had fewer days spent receiving services than the other racial/ethnic consumers. Also, Hispanics have less money spent on their case services when compared to other racial/ethnic groups. Age and total days spent on services, as well as age and total case expenditures were statistically significant. For example, as the age of a consumer increase by 1, the total number of days spent receiving services will increase by 2.46 days. No differences were found for sex or educational level at application.
Discussion

The findings from this research question found substantial differences and therefore a conclusion can be made that race and age influence the number of days spent on consumers receiving services and total case expenditures. The results found in this study are similar to previous studies that have reported differences in VR outcomes (Atkins & Wright, 1980; Wilson, Alston, Harley, & Mitchell, 2002c; Capella 2002).

The findings of African Americans and Hispanic having fewer days spent receiving services or in other words having their cases being closed earlier, can help explain why people of color have less successful closures rates and more likely to an “unemployed” work status at closure. People of color have a disproportionate number of disabilities, however they continue to be provided less services/training as well as have fewer days spent by VR counselors investigating what services will be the most beneficial for employment. This study cannot explain why or the cause for African and Hispanic Americans receive fewer days on case services. However, it could be speculated that bias, cultural mistrust, or consumers not following through with services could be viable reasons. Consumers’ lack of assertiveness or failure to participate in services provided may be another explanation. This reasoning could very well be true for certain racial/ethnic group, such as Asian Americans who may have language barrier issues, difficulty accessing services in an unfamiliar system, or fear of deportation, etc. Further studies should address these issues to explore the cause and assist the VR administration in accurately addressing such issues.
Questions 2. Is there a difference in the type of closure, reasons for closure, and work status at closure (status 26) for African Americans with EBD when compared to other consumers based on race, age, gender, and educational level at application?

Three separate multiple logistic regressions were used to ascertain whether type of closure, reason for closure, and work statuses at closure could be explained by race, age, gender, and educational level at application. The backward elimination method was chosen because it is explorative in nature. The regression models indicated consumers’ race and educational level at application significantly affect the type of closure. Consumers’ age, sex, and race significantly affect the reason for closure. Also, African American consumers were a three times more likely to be unemployed at closure or employed without supports at closure. Hispanic Americans were five times more likely to be unemployed at closure, nine times more likely to be employed without support at closure, and 12 times more likely to be self-employed at closure.

Discussion

The results from this study were similar to findings from previous research studies (Atkins and Wright, 1980) that found African Americans were under-represented and discriminated against at all levels of the vocational rehabilitation process. However, the research findings were statistically significant for rehabilitation counselors closing consumers of color cases based on race, which are similar to the results found in the Ross & Biggi (1986) and Wilson, Jackson, & Doughty (1999) studies. Ross and Biggi (1986) in their investigation found that substantial differences did exist in their investigation. They found that European Americans were closed more
in status 26 (successful rehabilitated) by approximately 50% more than that of African Americans and even higher percentages for American Indians/Alaskan Natives and Asian/Pacific Islanders. These huge margins of differences could also be seen in status 28 and 30 for the consumers of color being closed “not rehabilitated” whereas European Americans being closed “not rehabilitated” only accounted for a small percentage. The differences found between the current researcher’s study and Ross and Biggi (1986) can be due to using different statistical methods, the different size of the populations used and the two studies were conducted at different time periods. Wilson, Jackson, & Doughty (1999) found that counselor bias may exist and stereotypical views may filter a counselor’s decision in the reason for closure. For instance, the majority reason for African Americans’ case closure was “failure to cooperate” which implies that the counselor has exhausted all possible ways to work with these consumers and it is not possible to continue VR services. When historically, African Americans have been stereotyped as “lazy”, “difficult to work with,” and “aggressive.” Whereas the majority of European Americans’ cases were closed for the reason, “refused services.”

People with severe disabilities, such as psychiatric disabilities are faced with tremendous obstacles when evaluated for VR services. One study showed that people with severe disabilities face more challenges of being successfully rehabilitated than those not severely disabled (Finch & Wheaton, 1999). These researchers investigated consumers with severe disabilities that were actively receiving VR services. Their study found that consumers with severe disabilities could be successfully rehabilitated. Consumers who were accepted for VR services fared well and were able to be placed
in competitive employment and thrive. Contrary to popular belief, these consumers with severe disabilities were successful in other employment setting other than shelter workshops. Conclusions made from the study’s analysis found that clients with severe disability would be successful in receiving services, receiving more expensive services and achieve competitive employment, if accepted for VR services. In addition to this study other researchers have documented that African Americans have disabilities that are more severe than those from other people with disabilities (Alston, McCowan, & Turner, 1994; Atkins & Wright, 1980).

**Question 3.** Is there a difference in successful closures (Status 26) and unsuccessful closures for African Americans with EBD when compared with other consumers based on race?

Logistic regression was used to ascertain whether different race types could explain the success or failure of the closure. A successful or unsuccessful closure was the criterion variables in the present model. The backward elimination method was chosen because it is explorative in nature. The results showed being European American are associated with high successful closure probability when compared to other race groups. African Americans, Hispanics, and Other Race did not have a significant effect on closure type, individually.

**Discussion**

The results from this research questions are consistent with the findings of previous studies (Moore, 2001; Capella, 2002; Wilson, Turner, Jackson, 2002a; Wheaton & Hertzfeld, 2002). A consumers’ race continues to influence successful
closure. Even when other variables are held constant, European Americans progressed through the VR system and their cases were closed in competitive employment more often. These findings should bring to the forefront that even though changes are occurring, such as the implementation of diverse services, increase multicultural training/workshops for VR counselors, more multicultural counseling classes being taken in graduate school, and the hiring of more counselors of color, things continue to remain the same. Consumers of color continue to be less likely to have their cases closed successfully rehabilitated (employment outcome) than European Americans.

Thirty-five years ago Atkins and Wright (1980) made the statement that African American fare less in every step of the VR process. Section 21 of 1992 amendment of the rehabilitation act of 1978 confirmed their claim, however, bias continues to exist. More innovative programs need to be created and implemented to address such issues. More qualitative studies are needed to investigate whether differences in successful closures are due to bias from discrimination and racism or other variables that may explain the variations.

**Question 4.** Is there a difference in the types of services received by African Americans with EBD at closure (Status 26) when compared to other consumers based on race?

The chi-square of independence was used to ascertain the types of services and the association between the explanatory and criterion variable respectively. African American consumers who had their cases successful closed with an employment outcome were those that received the following services: college/university training,
occupational/vocational training, counseling, job finding services, transportation, and
maintenance. These services were shown to be the most beneficial services for African
Americans who had their case closed successfully.

Discussion

The findings for this research questions were similar to the findings of Wheaton,
Wilson, & Brown (1996), that found African Americans were more likely to receive
adjustment training, transportation, and maintenance as oppose to restoration
services and college-level training that could lead to more competitive employment.
Also, Wilson, Turner, & Jackson (2002a) study found that three most common
services reviewed by African Americans were maintenance, transportation, and
adjustment training. The research and literature shows African Americans can
benefit from services such as on-the-job training that improve their odds of getting
hired. These services are especially necessary when faced with external factors
such as not having a degree due to ongoing discrimination, oppression, and the
reality of having more disabilities and more severe disabilities than other
racial/ethnic groups. The findings from this study and previous studies hopefully
will establish validity in the type of services that are most beneficial for African
Americans that lead to successful closures.

Limitations of the study

Several limitations for this study should be addressed. First, this study
investigated national archival data from 2002 and it is assumed that miscoding of data
was random and unbiased. This is an ex post facto study and therefore causality cannot
be determined. Second, this study began with five different racial/ethnic groups. However, due to the low percentage of people in the categories of Asians and Native American, these two groups were collapse into one group, known as “Other Race.” This study is not able to report the relationships that may exist individually with American Indian/Alaskan Native and Asian/Pacific Islander and the criterion variables. Third, there may have been other variables not used in this study that may have had an influence on the response variable.

Recommendation for Future Research

Future research studies should focus on qualitative studies using Native American/Alaskan Natives and Asian/Pacific Islanders as the primary ethnic group. Due to the small percentage represented by these ethnic groups in the population it is usually difficult for researchers to get valid and reliable data as to how they fare in the VR system. A qualitative study would allow the researcher to survey these individuals, specifically, as well as evaluate the quality of services they are receiving. The information from these future studies can provide implications for multicultural training, approved service delivery, and the vocational rehabilitation service administration. Also, the present study should be replicated to determine if similar results are revealed. Findings from this study help in emphasizing the understanding of different worldviews (values, culture, etc) that exist among all racial/ethnic groups and the need for a more proactive service delivery approaches, which seeks to understand the consumers’ worldview in conjunction with the counselors increasing their own cultural awareness.
Implications

This study offers several implications for the field of rehabilitation. First, this study offers data that supports previous studies and helps to add validity to the types of services that are most beneficial for African Americans as well as race continues to influence VR outcomes. Secondly, the results are important for administrators, counselors, and program development to create more culturally diverse services for the rapidly growing diverse population being served. Besides having implications for program development and administrators, this study offers valuable research data for schools and rehabilitation centers that work primarily with high school students (school-to-work transition age groups). Many students in high school have already been diagnosed with an emotional or behavioral disability. This study yields implications for better job training skills that can be incorporated into the classroom, as well as counseling not only focused on appropriate classroom behavior but also on the social skills needed to maintain employment.

Also, students and their parents may need education to understand their diagnosis and individual plan for employment. Particularly, African American male students that dominate the emotional disorders (ED) classrooms who may need help adjusting to the reality of having a “double whammy,” being African American and having a mental impairment (Fiest-Price, 1995).
Summary

The methodology used for this study described the investigation between the relationship of consumer race, VR services and outcomes. Consumers who had no missing data on the variables under investigation were used for this study. The use of descriptive statistics and inferential statistics was chosen to investigate the relationship and association of explanatory and criterion variables.

This study used national data as oppose to state data, therefore having an advantage in establishing if a pattern of bias really does exist based on race in the vocational rehabilitation system for the fiscal year of 2002. Furthermore, this study goes beyond the scope of previous studies that have only investigated African American and European Americans, by including the ethnic groups of American Indian/Alaskan Native, Asian/Pacific Islanders, and Hispanics. By adding other racial/ethnic groups to the study it provided information on whether or not these other groups are affected by racial bias.

Race continues to make a difference in service provisions for VR consumers. The results of this study showed that African Americans and Hispanics have fewer days spent on services than other racial/ethnic consumers. Also, Hispanics have less money spent on their case services when compared to other racial/ethnic groups. Age and total days spent receiving services, as well as age and total case expenditures were statistically significant. For example, as a consumer’s age is increase by 1, the total number of days spent receiving services will increase by 2.46
days. Consumers’ race and educational level at application affect type of case closure. Consumers’ age, sex, and race influence the reason for case closure. Also, African American consumers were a three times more likely to be unemployed at closure or employed without supports at closure. Hispanics were five times more likely to be unemployed at closure, nine times more likely to be employed without support at closure, and 12 times more likely to be self-employed at closure.

European Americans are more likely to have their case closed successfully when compared to the other racial/ethnic groups. African Americans who cases were successfully closed (Status 26) received six services (college/university training, occupational/vocational training, counseling, job finding services, transportation, and maintenance) that were the most beneficial to their case closings.

Prior research (Atkins & Wright, 1980; Bolton & Cooper, 1980; Feist-Price, 1995; Ross & Biggi, 1986; Wheaton, 1995; Wilson, Jackson, Doughty, 1999) has already shown conflicting results when similar variables of race, sex, and rehabilitation outcomes were investigated. This study sheds more light on these issues and assist in logical conclusions being made and substantiated. The results from this study offer implications for multicultural training, administrators, program development, school-to-work transition programs and services.
LIST OF REFERENCES


Wilson, K. B. (1999b). Difference in hourly wages and hours worked between successfully rehabilitated African American and European Americans: The more things change, the more they stay the same. Journal of Applied Rehabilitation Counseling, 30(4), 10-15.


