Running head: Race/Ethnicity and Access to VR

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Access to Vocational Rehabilitation: The Impact of Race/Ethnicity

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Abstract

The participation of racial and ethnic minorities in the state-federal vocational rehabilitation (VR) system was investigated by examining access (application and entry) to VR. Previous investigations have focused on acceptance and participation rates and have indicated that the percentage of African Americans with visual impairments in VR has been higher than their percentage in the general population. This study found that access percentages were higher for African Americans, lower for Whites, and about the same for Hispanic Americans, relative to the percentages of persons of the same race/ethnicity who were blind or visually impaired in the national population. Results were interpreted to indicate that socioeconomic disadvantages experienced by African Americans who are visually impaired increase their need to access VR relative to Whites who are visually impaired.

Access to Vocational Rehabilitation:

The Impact of Race/Ethnicity

The participation of racial and ethnic minorities in the state-federal vocational rehabilitation (VR) service delivery system has been of substantial interest to rehabilitation researchers and policy makers for more than two decades. Consumers of VR services participate in a sequential process. This process can be investigated at various stages—from initial application, acceptance, service delivery, closure, and beyond, and the effects of racial and ethnic minority status may influence equitable participation at multiple stages of this process. This study included blind or visually impaired consumers who accessed VR, including those not accepted for services. Access was defined as having applied for or entered the VR system. Thus, this study examined the role of race/ethnicity on a national scale for persons who are blind or visually impaired who accessed services under the Title I (VR services) program.

Racial and ethnic groups, in comparison with Whites, were reported in Section 21 of the1992 Rehabilitation Act Amendments to experience higher rates of growth in the general population and higher rates of disability. Minorities also were reported less likely than Whites to be accepted for VR services, receive training services, and be rehabilitated. Consequently, funding was appropriated for programs authorized under Titles II, III, VI, and VII of the Rehabilitation Act of 1973, as amended, to improve VR services and increase outreach to racial and minority groups. Studies both pre- and post-implementation of Section 21 generally have focused on the experiences of individuals from racial/ethnic

groups *after* they enter the VR process, as opposed to studies investigating access or application rate of racial/ethnic groups. For example, several researchers have compared acceptance rates (Capella, 2002; Cavenaugh & Giesen, 2003; Hayward & Schmidt-Davis, 2002; Wilson, 2000; Wilson, Harley, & Alston, 2001), patterns of services (Moore, 2002; Wheaton, Finch, Wilson, & Granello, 1997), and outcomes of minority and White consumers (Capella, 2002; Fiest-Price, 1995; Herbert & Martinez, 1992). Although state VR agencies must have an approved State Plan documenting activities to identify and serve racial/ethnic groups, recent studies have not focused on the difficult question of whether minorities apply for VR services at rates proportionate to their numbers in the general population. Further, no study was found that controlled for higher prevalence of disability among individuals from racial/ethnic backgrounds.

In possibly the earliest investigation of minority participation in VR, Wilkerson and Penn (1938) analyzed data from VR consumers closed "rehabilitated" during 1937 from 16 Southern and 7 Northern states. They found substantially lower rates of African Americans with successful rehabilitation outcomes than their percentage in the general population. Although the percentage of African Americans in the general population was reported at that time to be 25% in the Southern states and 4% in the Northern states, Wilkerson and Penn found that only 8% and 3% of rehabilitated consumers, respectively, were African American.

There was an absence of related research for more than four decades following the Wilkerson and Penn study. Then, Atkins and Wright (1980)

conducted a landmark national study concluding that African American consumers, when compared with White consumers, received unequal treatment throughout the VR process, including not being as likely to be accepted for VR services. Atkins and Wright did not address racial differences in rates of access (to include initial application) to VR.

Bolton and Cooper (1980) responded to Atkins and Wright's (1980) findings of lower acceptance rates by noting that African Americans comprised 22.9% of all consumers accepted for VR services, whereas their percentage in the general population was estimated to be 11.6%. Bolton and Cooper also suggested that given higher disability rates and lower economic status experienced by African Americans, African Americans would be expected to be in greater need of VR services than Whites. This has been supported, in part, by U.S. Census Bureau data that race and ethnicity along with age, education, income, living arrangements, and gender are the major predictors of disability (Smart & Smart, 1997).

Several studies have investigated the early stages of the VR process. Using U. S. Census Bureau and Rehabilitation Services Administration (RSA) data from a Midwestern state, Dziekan and Okocha (1993) found that racial/ethnic minorities applied for services at a rate of 12.9%, 7.8% higher than their representation in the population of that state. Dziekan and Okocha interpreted the higher application rates of minorities as reflective of higher prevalence of disability in minority populations. Patterson, Allen, Parnell, Crawford, and Beardall (2000), using data from a Southeastern state, also found

that the percentage of African Americans applying for VR services was higher than in the general population (22% vs. 14%). They also suggested that higher application rates were indicative of higher rates of disability among African Americans.

In an investigation of the race/ethnicity of VR service providers and consumers in two Southeastern states, Giesen et al. (1995) reported that the percentage of African American VR consumers with visual impairments was about 5% higher than the percentage of African Americans in the general population (34% vs. 29%). Giesen et al. (1996) then compared U. S. Census Bureau data with national RSA data and also found that African Americans with visual impairments were proportionally overrepresented as VR consumers. This overrepresentation in VR does not extend to the Title VII Chapter 2 independent living program for older blind consumers, where minorities are reported to be underrepresented relative to their proportions in the general population (Moore & Sansing, 2003).

Summary

At least in the last two decades, research indicates that racial/ethnic groups, particularly African Americans, have accessed and are accepted for VR services at higher rates than their representation in the general population. However, previous research has only speculated that the elevated application rate was due to increased prevalence of disability. No studies comparing access or application rates of racial/minority groups with their percentages in the population have controlled for this higher prevalence of disability. Previous

research has not provided the appropriate comparison group: The profile of total access or application rates by race/ethnicity should be compared with the profile of persons *with the appropriate corresponding disability* in the general population. Thus, the purposes of this research were (a) to extend investigation of race/ethnicity differences by reassessing total access employing current national data, (b) to provide an appropriate reference group that takes differential disability prevalence rates into account by using national disability data (from the National Health Interview Survey, Disability Supplement), and (c) to then determine if individuals with disabilities from ethnic/racial groups are accessing the state-federal VR program in proportions commensurate with their presence in the population of persons with those who are blind or visually impaired.

Method

Data Sources

This study employed data from the 1994 and 1995 National Health Interview Survey on Disability, Phase I (NHIS-D) to provide national population percentage estimates (U.S. Dept. of Health and Human Services, National Center for Health Statistics, 1996, 1998). RSA-911 national data for 1999 were used to provide rates of access to VR.

NHIS-D. The NHIS-D is a supplemental survey to the National Health Interview Surveys (NHIS) and was conducted in 1994 and 1995. The NHIS series, conducted since 1969 by the National Center for Health Statistics, provides a continuous sampling and interviewing of the civilian, noninstitutional

population of the U.S. through core surveys and supplemental datasets. It is the principal source of information on the health of the civilian noninstitutionalized population of the U.S. (excluding Territories) (Benson, & Marano, 1995). The NHIS-D was conducted to provide policy-relevant data on disability. The NHIS-D employed a multistage probability design, is nationally representative, and had a response rate of 93%. The NHIS-D was conducted in two phases. Phase I was administered at the same time as the NHIS core. The Phase I Disability questionnaire elicited information on disability and was used as a screening device for Phase II, which was a follow-up survey of disabled individuals. In Phase I questions related to vision, respondents were asked whether anyone in the household had "SERIOUS difficulty seeing even when wearing glasses or contact lenses." In follow-up questions, respondents were asked if they are legally blind and if they expected "to have SERIOUS difficulty seeing, for at the least the next 12 months." Both categories of visual impairment were included in the analysis; however, those respondents that did not expect their visual impairments to last more than 12 months were included with those reporting *not* having serious difficulty seeing. For the present study, cases were restricted to ages 18 to 65 (N = 121,847, unweighted count).

RSA-911 Data

Case record data on 23,346 individuals between ages 18 and 65 with major disability of legal blindness (RSA codes 100-119) or visual impairment (RSA codes 120-149) closed in any status by state-federal VR agencies in the U.S. (excluding Territories) during FY 1999 were examined. Cases from the

Territories were excluded (less than 0.1%) because the comparison data from the NHIS-D did not include Territories. State identifiers were used to construct a region variable to enable breakouts by the four Census Regions.

Procedure

Coding of Race/Ethnicity

The RSA-911 data file contained the variable *Race* with code categories: "White," "Black," "American Indian or Alaskan Native," and "Asian or Pacific Islander." These code groups are defined in the Reporting Manual for the Case Service Report (RSA-911) (RSA, 1995). *Hispanic Origin* was coded for a person who is or is not of Hispanic origin. "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" (RSA, 1995, p. 5). Mutually exclusive race/ethnicity categories were created. These were White, African American, Native American, and Asian/Pacific Islander (all non-Hispanic); and Hispanic, of any race.

The NHIS-D contains detailed information on race and ethnicity categories. For race, there are 16 response categories plus "multiple race" and "race unknown" categories. For Hispanic origin, there are 8 Hispanic categories, a "Not Spanish origin," and an "unknown if Spanish origin" category. These two variables were used to construct a new race/ethnicity variable corresponding as nearly as possible to the race/ethnicity coding in the RSA-911 data. Categories included White, African American, Native American, Asian/Pacific Islander, and Unknown (all non-Hispanic); and Hispanic, of any race.

Analysis

Analysis consisted of generating crosstabulations of NHIS-D data to obtain percentage distributions of persons with visual impairments by vision status (legally blind, visually impaired), race/ethnicity, sex, and region. These analyses used weighted data to provide estimates of the national percentage distribution by race/ethnicity of persons with some type of visual impairment. Similar crosstabulations were computed for RSA-911 national population data for FY 1999. These analyses provided the national percentage distribution for those who had accessed the VR system.

Given that the NHIS-D is a nationally representative survey and the RSA-911 data can be considered a population--not a sample--for a given year, and that both data sources are based on very large numbers of cases, derived percentages were reported in a descriptive fashion. Differences in percentages were evaluated in terms of the magnitude of differences (effect sizes). Inferences as to importance of differences (practical significance) can be made directly from observed effect sizes. Nonetheless, to make this approach more convincing, selected differences in percentages between NHIS-D and RSA-911 data were tested for statistical reliability (significance) using a *z* test for the difference between proportions using actual (unweighted) *N*s.

Results

Population Distribution of Blindness and Visual Impairment and Race/Ethnicity

As shown in Table 1, for those who were classified as legally blind or visually impaired in the NHIS-D, most were White. African Americans and Hispanic Americans comprised the next largest groups, and Asian Americans and Native Americans were the smallest groups. Hispanic Americans who were visually impaired comprised a slightly higher percentage (12%) than did those who were legally blind (10%).

Access to Vocational Rehabilitation

The race/ethnicity distribution of those who had accessed VR (based on RSA-911 data) showed the same general pattern as that for those in the general population who were blind or visually impaired (Table 1). Again with respect to access, visually impaired Hispanic Americans comprised a higher percentage (13%) than did those who were legally blind (9%).

Comparison of the distributions within race/ethnicity group and vision status indicated that for those who were *legally blind*, the VR access percentage (RSA-911 data) for Whites was 7% lower than the population disability percentage (NHIS-D), $z = 2.93$, $p = .0034$. This difference indicated a relative underrepresenation of persons who were legally blind and White who accessed VR. For legally blind African Americans, access was 9% higher than the population disability percentage, $z = 4.26$, $p = .00002$, indicating a relative overrepresenation of legally blind African Americans who accessed VR. For legally blind Native Americans, Asian Americans, and Hispanic Americans, the

population disability percentages and VR access were almost identical, indicating that access to VR for these groups essentially was equal to the population disability percentage. This finding for Native Americans and Asian Americans is advanced cautiously due to insufficient underlying sample size (less than 20) for NHIS-D estimates.

Similar comparisons for those who were *visually impaired* indicated that Whites were underrepresented (6%, $z = 4.89$, $p < .00002$) and African Americans were overrepresented (8%, $z = 7.61$, $p < .00002$) regarding access to VR relative to their corresponding population percentage (those visually impaired). Relative representation was very similar for visually impaired Native Americans, Asian Americans, and Hispanic Americans, indicating that access to VR for these groups essentially was equal to the population disability percentage.

Sex differences. Sex differences also were examined for access to VR and relative to population disability percentages. For access, percentages were generally similar between the sexes across race/ethnicity groups for both legally blind and visually impaired groups, with some small exceptions. Both for those legally blind and those visually impaired, access rates for White males were slightly higher (2-4%) than for White females. For African Americans, access rates for females were slightly higher (2-4%) than for males. The population distribution vs. access percentage comparisons within sex were of similar size and followed the same pattern as that reported overall: lower access rates (underrepresentation) for Whites and higher access rates (overrepresenation) for African Americans.

Regional variation. For completeness, data were examined by the four U.S. Census Regions. Some variation was expected and found by region, particularly regarding the geographic distribution of racial/ethnic groups. In general, the same trends were shown within region as were found overall with respect to population distribution vs. access percentage comparisons.

Discussion

A major finding of this investigation was that African Americans who are blind or visually impaired are accessing the state-federal VR system at a higher percentage rate than their percentage in the general population of those who are blind or visually impaired. Additionally, persons who are White and blind or visually impaired are accessing VR at a lower rate than their percentage in the general population of persons who are blind or visually impaired. The former finding is consistent with previous research that indicates the percentage of African Americans in the VR system is higher than their percentage in the general population without regard to visual impairment status. The findings of this investigation used the general population of persons who are blind or visually impaired as a reference level for access rate and did not, as in previous research, have to speculate that African Americans in the general population would be expected to access VR at a higher rate due to the known higher incidence of visual impairments among African Americans (e.g., Prevent Blindness America, 2002). Two further issues need to be considered: the size and importance of the "overrepresentation" effect and why it may be occurring.

Cohen (1988) provides investigators with a frame of reference for appraisal of differences between proportions (or percentages) in terms of "small," "medium," and "large" differences. A "small" difference is about 5% to 10%; a "medium" difference is about 20% to 25%; and a "large" difference is in the range of 35% or greater. Given these benchmarks, our differences would be considered "small" in terms of effect size. Kirchner, Schmeidler, and Todorov (1999) adopted a similar scheme for evaluating percentage differences in her study of employment of persons who are blind or visually impaired using NHIS-D data and did not call attention to differences much smaller than 10% because "they are a weak basis for policy decisions" (p.13). However, they did temper this view: "Setting a threshold of importance for policy, and identifying at what points to call attention to findings of greater policy importance, are 'judgement calls' based on convention unless, ideally, theory or experience provide compelling alternatives" (p. 13). The direction of contemporary research literature and experience stress that even "small" differences are important for our thorough understanding of race/ethnicity influences in access to VR for persons who are blind.

A review of Title I state plans indicates that VR agencies have implemented a variety of strategies to increase outreach to minorities with visual impairments (Steinman et al., in press). Although a higher access percentage for African Americans relative to their percentage in the visually impaired population may be attributed, in part, to success of these outreach efforts, other researchers have suggested that higher participation rates are related to social disadvantages

experienced by racial/ethnic minorities (Bolton & Cooper, 1980). It is likely that such disadvantage does not begin with contact with the VR system. Rather, it likely exists in a general social context. Thus, we suggest that our finding of "overrepresentation" of African Americans in VR may be associated with preexisting economic disadvantage, and this factor serves to produce a greater motivation to access VR than may be found among persons who are White and blind or visually impaired. To evaluate this suggestion, we examined socioeconomic indicators of income and employment from the NHIS-D. Regarding income for those visually impaired or legally blind, 72% of African Americans, 60% of Hispanic Americans, and 44% of Whites had family incomes less than $20,000. The percentages were 42%, 41%, and 19%, respectively, for persons with no visual impairment. Regarding employment for those visually impaired or legally blind, 30% of African Americans, 42% of Hispanic Americans, and 50% of Whites reported being currently employed. The percentages were 69%, 69%, and 78%, respectively, for persons with no visual impairment. These preliminary data support the hypothesis that the "overrepresentation" of African Americans in VR is associated with preexisting socioeconomic disadvantage. Future research should provide a more thorough investigation of this issue, as well as move to the next step in the VR process—acceptance—as influenced by race/ethnicity of the blind or visually impaired consumer.

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Table 1

Race/Ethnicity Distribution of Visual Impairments and Access to VR by Degree of Visual Impairment, Ages 18-65

Vision Status	*Race/ Ethnicity*	*Population Distribution (NHIS-D)*[a] *%*	*Access (RSA-911) %*
Legally Blind	**White**	73	66
	African American	14	23
	Native American	2[b]	1
	Asian American	1[b]	1
	Hispanic American	10	9
	Total	100	100
Visually Impaired	**White**	68	62
	African American	15	23
	Native American	2	1
	Asian American	3	1
	Hispanic American	12	13
	Total	100	100

Note. NHIS-D percentages were based on weighted data.

[a] For NHIS-D, race/ethnicity was not able to be determined (not ascertained, don't know, refused, multiracial) for 1.2%.

[b] Base sample size insufficient for reliable estimate.

Sources. NHIS-D data from U.S. Dept. of Health and Human Services, National Center for Health Statistics. (1996, 1998). *National Health Interview Survey On Disability, 1994 and 1995: Phase I, Disability Outcome Supplement* [Computer file]. RSA-911 data from Rehabilitation Services Administration, Case Service Report for FY 1999. Calculations and interpretations by MSU RRTC B/LV.