

# Disparity of closure types in vocational rehabilitation services

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**Abstract.** Asian Americans and Pacific Islanders (AAPI) is one of the fastest growing minority groups in the country. Limited research with this ethnic minority, however, provides a major barrier for Vocational Rehabilitation (VR) practitioners to establish culturally appropriate policies and practices in the VR field. A chi-square test was conducted to investigate the statistical difference of closure types between AAPI and White Americans with disabilities who were recorded in the RSA-911 database for the fiscal year 1999–2000 as having closed for VR services. AAPI with disabilities were less likely to be “accepted” and, of those who were accepted, AAPI had less “successful closure” than White Americans in the VR process. The test results revealed statistically significant disparity in closure types between the two groups at the 0.05 level. Study results and limitations were discussed. Suggestions for future research and implications for VR service improvement were presented.

## 1. Introduction

The number of minority individuals with disabilities has increased steadily over the past several decades. Of these minorities, the US Census Bureau projects Asian Americans and Pacific Islanders (AAPI) will grow proportionately more than any other minority group in the country, from approximately 10.6 million (3.9% of the US population) in 2000 to more than 35.7 million (8.9% of the US population) by the year 2050 [17,24,25]. Of these 10.6 million AAPI, it is estimated that 13%, nearly 1.4 million, have some type of disability according to the estimation of disability prevalence among the US population in the Survey of Income and Program Participation [23]. As this minority with disabilities population increases, so does their need for government services, including Vocational Rehabilitation (VR) services.

The Survey of Income and Program Participation (SIPP) also estimated that approximately 50% of 27.8 million people with disabilities in the US were unem-

ployed [23]. To make matters worse, about 70% of 17.4 million individuals with severe disabilities were unemployed which is much higher than the unemployment rate of those without disabilities [23]. Although employment and earnings data for AAPI are not available from the US Census Bureau, people with disabilities from culturally diverse backgrounds often experience twice the discrimination experienced by people without disabilities in the minority community [26]. Has AAPI participation in the VR system reached the levels warranted by their need to reverse these disturbing unemployment rates?

Most of the studies regarding minority status on VR services has been specific to African Americans with disabilities [1,5,14,18,27,28,30,32,33]. Very limited research for AAPI was available. For example, Wilson [31] indicated that African Americans were included in nine major VR studies addressing racial backgrounds and VR acceptance, whereas AAPI was included in only three out of nine VR studies. Wilson [31] further found that White Americans were more likely to be accepted for VR services than were African Americans, but there were no statistically significant differences with American Indians, Alaskan Natives, and AAPI.

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In addition to Wilson, several other researchers included AAPI as part of their investigation by utilizing the RSA-911 database [2,4,10,29,32]. All of these studies focused on one or more types of closures in the VR process. For the closure type in application status, two studies discovered that minority applicants, including AAPI, were less likely to be accepted for VR services than White American applicants [4,32]. For the rehabilitated closure status, one study indicated that White Americans were most likely to be rehabilitated successfully compared to other minority groups with similar forms of disability [29].

Although Hart and her colleagues investigated closure types, they provided no ethnic specific information [10]. Their study focused on the types of postsecondary education services provided to different ethnic groups, using 1997 RSA-911 national data. They revealed that 22% of individuals identified as White received some form of postsecondary education services, while 14.6% of African Americans, 21.3% of American Indians, 21% of Americans of Hispanic origin, and 20.4% of AAPI received these services [10]. However, they did not analyze whether these differences among diverse racial groups were statistically significant. They noted that there was a positive relationship between the postsecondary education services received and successful closures of VR consumers.

The current study is undertaken to determine whether any disparity exists in closure types between White Americans and AAPI using the RSA-911 database for fiscal year 1999–2000. It attempts to forge ahead in the pioneering efforts of previous studies from two perspectives. First, although a few studies sought to determine the disparity of closure types in VR services based on racial status, no study investigated issues exclusively specific to AAPI. Second, while many previous studies used a state database, this study uses a national database [4,5,14,18,28,33,34].

## 2. Method

### 2.1. Data

The data for the study came from the Rehabilitation Services Administration (RSA) database, referred to as RSA-911, which is compiled by the RSA from data submitted by state agencies each year. The database of the current study includes cases that were closed from October 1, 1999, through September 30, 2000. The coding procedures for the data conformed to federal

guidelines established by RSA in 1995 [21]. The original population consisted of 624,250 applicants who applied for services to VR agencies or Bureau of Visual Service agencies throughout the US.

Sampling included the following steps. First, participants were identified who had no missing values on the variable of racial status. They consisted of 470,212 White Americans and 8,519 AAPI. Second, 500 cases were selected separately for each racial group, using the random sampling method generated by the personal computer version of the Statistical Package for the Social Sciences [22]. This random sampling method ensured an accurate representation of the total population. Since the value of a chi-square is greatly influenced by sample size, using a small sample size decreases the probability that statistical significance will be found. Selecting 500 cases from each racial group equated proportionately to 0.1% of all White American applicants (500/470,212) and 5.9% of total AAPI applicants (500/8,519).

### 2.2. Variables

#### 2.2.1. Racial status

Racial status served as the independent variable. It was identified from information provided by each consumer on their application for VR services [21]. Two racial groups were selected for this study, individuals identified as White and those identified as AAPI. According to RSA Policy Directive [21], White Americans consist of persons with origins in Europe, North Africa, or the Middle East, whereas AAPI refer to persons with origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands [21].

#### 2.2.2. Types of closure

Type of closure served as the dependent variable. When individuals apply for VR services, their cases are closed out at six different points and coded [21]. To simplify the types of closure for the comparison of this study with other VR studies, these six types of closure were recoded into three types of closure: “not accepted,” “accepted without successful closure,” and “accepted with successful closure.”

“Not accepted closure” refers to (a) closure from the applicant status (status 08 from status 02); (b) closure from extended evaluation (status 08 from status 06); or (c) closure from the pre-service listing (status 38 from status 04). Basic criteria for closing an individual’s program from applicant (status 02) or extended evaluation (status 06) status are: (1) one or both of the criteria

Table 1  
Closure types

	Not accepted		Accepted without successful closure		Accepted with successful closure	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
AAPI	107	21.4	217	43.4	176	35.2
White	85	17.0	199	39.8	216	43.2

Note:  $\chi^2(2, N = 1,000) = 7.38, p < 0.05$ .

for eligibility for VR services are not met and the individual is ineligible for services, or (2) other reasons unrelated to disability (e.g. individual is not interested in services or counselor is unable to locate applicant [3]).

“Accepted without successful closure” means either (a) closure after individualized program for employment initiated (status 28); or (b) closure before individualized program for employment initiated (status 30). A consumer moves into status 28 when the following criteria have been met: (1) a consumer has been determined eligible; (2) a consumer has received an assessment to determine vocational rehabilitation needs; (3) an Individualized Plan for Employment (IPE) has been completed; (4) at least one service planned in the IPE has been initiated; and (5) for some reason, the consumer was unable to achieve the vocational goal [3]. A consumer closed in status 30 has been determined eligible for VR services but is unable to achieve the vocational goal and has not received any planned VR services [3]. A consumer will enter status 30 if: (1) no IPE has been developed; or (2) no service planned in an IPE has been provided; and (3) for some reason, circumstances preclude participation in the VR program as outlined in the IPE.

“Accepted with successful closure” refers to rehabilitated closure (status 26). An individual is determined to have achieved an employment outcome if the following conditions are met: (1) the services provided under the individual’s IPE have contributed to the achievement of the employment outcome; (2) the employment outcome is consistent with the individual’s strengths, resources, priorities, concerns, abilities, capabilities, interests, and informed choice; (3) the employment outcome is in the most integrated setting possible, consistent with the individual’s informed choice; (4) the individual has maintained the employment outcome for a period of at least 90 days; and (5) the individual, the employer and the counselor consider the employment outcome to be satisfactory and agree that the individual is performing well on the job [3].

### 2.2.3. Data analysis

Descriptive statistics of frequencies and percentages were used. In addition, chi-square tests were used to

determine whether the two groups differed significantly in closure types. All the statistical analyses were performed by using the personal computer version of the SPSS [22]. The significant level of chi-square was determined to be 0.05 by considering a moderately large sample size.

## 3. Results

As shown in Table 1, AAPI (21.4%) were more likely to be “not accepted” for VR services than were White Americans (17%). Also, AAPI (43.3%) were “accepted without successful closure” at a higher rate than White Americans (39.8%), whereas White Americans (43.2%) were more likely to be “accepted with successful closure” than were AAPI (35.2%).

The different frequencies and percentages revealed that racial status and closure types were associated with each other. A chi-square test of association showed a significant association between racial background (AAPI versus White Americans) and closure types ( $\chi^2[2, N = 1,000] = 7.38, p < 0.05$ ).

## 4. Discussion

### 4.1. Limitations of the study

This study used an exploratory, ex post facto research method that evaluated the existing database from RSA’s reporting system. Therefore, a causal relationship between the racial status (independent variable) and the types of closure (dependent variable) could not be established without further studies.

In addition to racial status as a RSA-911 database variable, there are other multiple variables of the consumers associated with VR service closure status including gender, education at application, work status at application, primary source of support at application, severity of disability, use of assistive technology, and time in rehabilitation [32]. Also, other outside uncontrolled variables could affect the results of the study

including household numbers, poverty level, gender, and public attitudes on disability, all of which can influence the status of VR service closure [7]. No control variables have been used for this study.

The chi-square test statistic is used for this study. Although it has been used by a number of previous VR studies [5,33], it has limitations related to probability. The probability of finding statistical significance increases as the sample size increases [22]. It has not established the right sample size from a huge national data such as RSA-911 from previous studies. Previous studies have not determined the ideal sample size to maximize statistical significance when comparing statistics from such a huge national database as RSA-911. The probability also increases if a proportional sample is drawn from the population of each ethnic group rather than utilizing equal samples of 500 participants from each group as was used for this study. For example, 10% of White Americans who applied for services comprises 47,021 applicants, while the same percentage of AAPI consists of only 852 applicants. The large difference between the sample sizes of these two ethnic groups will directly influence the observed and expected counts.

#### 4.2. *Types of closures*

The results of the current study reveal significant disparity between types of closure for VR services provided to AAPI and White Americans, although these results should be interpreted with caution due to the limitations addressed above. These findings are in accord with previous research which suggests that White Americans have been accepted for VR services at a higher rate than Asian Americans [4]. However, AAPI acceptance rates were not found to be statistically significant in the analysis of a chi-square test of VR service acceptance using 1997–1998 RSA-911 data [31]. In addition, lower proportions of AAPI may have resulted from those who chose not to follow through with the acceptance process because of language and cultural differences. Alternatively, biases in the perceptions of rehabilitation counselors determining eligibility for services may have resulted in underestimations of rehabilitation potential. Some studies indicate that rehabilitation counselors may need to learn to recognize and acknowledge Eurocentric personal biases they may have as well as those inherent in the VR system [6, 16]. To improve acceptance rates for AAPI, rehabilitation counselors may need training regarding myriad cultural and language issues surrounding AAPI.

In addition to low acceptance rates for AAPI, low percentages of AAPI referrals to VR services relative to their proportion of the general population should also be considered. For example, only 1.31% of all VR applicants were AAPI, which indicates under-representation commensurate with the 4.54% of AAPI in the national population composition [12]. Also, the disability prevalence rate of AAPI was 13% while the disability prevalence rate of White Americans was 20.4% [25]. This low percentage can be explained by the fact that AAPI tend to hide family members with disabilities and often can be difficult to locate [9,19].

Wilson et al. [32] also raised an interesting observation that may offer grist for further study on the acceptance rates of AAPI for services. They stated that the higher the education level of the applicant, the less likely the applicant was of being accepted for services. Because AAPI have often been considered the “model minority,” having overcome social barriers and prioritizing education in their quest to achieve success and independence [9], could such stereotyping contribute to VR service providers perceiving AAPI with disabilities as having fewer needs for services than other applicants?

The current study also found that White Americans were more likely to find employment than were AAPI, which is congruent with those indicated in the previous studies [2,29]. A few other studies revealed that minority applicants with rehabilitated closures still generated significantly less income than their White American counterparts [5,16]. There appears to be racial disparity in vocational success. Such differences may also be caused by pre-existing discrimination in the workplace [2]. The changing demographics of the nation stress the need to increase success rates of persons with disabilities from minority cultures. What can be done to increase successful closure rates for minorities, especially AAPI with disabilities?

Expansion of employment opportunities for Americans with disabilities from minority cultures is essential, since they tend to experience greater ratios of service exclusion and lack of employment opportunities [20]. To accomplish this, culturally and linguistically appropriate service models and programs should be developed to increase successful rehabilitation results [15]. Training for vocational rehabilitation personnel must include multicultural emphases and clinical training experiences involving persons with disabilities from minority populations [13]. Gordon and Perez [8] suggested the need to incorporate languages other than English and to use family support systems

such as family and community resources to assist in the rehabilitation process. Preservice and inservice training for rehabilitation personnel should include perspectives on multi-ethnic, community-based minority issues. Additionally, rehabilitation agencies need to reach out more actively to AAPI with disabilities to encourage their involvement in organizational programs. These agencies also need to reach out to business communities and employers as well, in an effort to dispel any Eurocentric biases that may exist in the marketplace. Pi [19] advocated for the use of community structures such as churches and other community organizations as part of the vocational rehabilitation process. Participation in VR services by culturally diverse minorities is an important area of research and must be woven into VR preservice and inservice training programs.

#### *4.3. Implications for future research*

This exploratory study attempted to depict a national picture of the closure status of VR services for AAPI. The results of this study raise further questions that should be investigated using more sophisticated research methods. In regard to addressing the limitations of the chi-square test, the current study can be replicated by using different sample sizes to see if increasing the sample size increases the probability of finding statistical significance, or vice versa. The study might also yield different results if a proportional sample is selected from the population of each ethnic group [33].

More advanced statistical analyses such as logistic regression [29] should also be used to investigate the association of variables using systematic sample data reflecting different ratios of the population of VR consumers. It is also recommended to use control variables, such as education [29], to account for extraneous factors that might threaten the internal validity of the findings. Further, replication studies are recommended in various states and regions across the country to investigate if significant disparity holds true in VR closure types by different racial groups.

Since successful closure of their consumers is an ultimate goal of most VR counselors, in future studies it might be useful to identify trends and types of VR services received by AAPI whose cases have been successfully closed. Such studies could be conducted on national, state, and district levels to determine best practices and most effective training methods that lead to high rates of “accepted with successful closure” status while addressing rural and urban differences. Ef-

fective instructional technique could then be implemented to train VR counselors in these best practices, such as video self-modeling, a powerful skill acquisition tool [11]. Counselors would view positive images of themselves modeling techniques culturally sensitive to AAPI in every aspect of the counseling process. In addition, such individualized training films could be viewed periodically to maintain these newly acquired culturally sensitive skills, especially at VR centers located in areas with low AAPI populations where contact with AAPI clients is infrequent.

## **5. Conclusions**

The intent of this study was to determine if disparity exists regarding types of closure between AAPI and White Americans with disabilities applying for VR services. Based on the chi-square test analysis of 1,000 consumers randomly selected from RSA-911 for the fiscal year 1999–2000, it was determined that AAPI applicants were less likely to be accepted for services and, of those who were accepted, AAPI tended to experience less rehabilitated closure than did White Americans.

Much of American society views AAPI as an unseen “model minority” with little need for social services or assistance of any kind. This stereotypic perspective of Asian Americans and Pacific Islanders exemplifies myriad existing cultural barriers to employment and rehabilitation services. Of primary importance to dismantling these barriers is expanding current research of this minority group and applying the findings to further educate rehabilitation agency personnel, employers and policy makers about cultural differences of AAPI to increase delivery of rehabilitation services and enhanced employment opportunities.

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