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LATINO MEN WITH HIV/AIDS IN NEW YORK STATE:
FACTORS INFLUENCING USE OF VOCATIONAL REHABILITATION SERVICES

A Dissertation in

Counselor Education

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ABSTRACT

As part of the fastest growing minority population in the U.S., Latino men are an ethnically and racially diverse group who are disproportionately affected by both HIV/AIDS and unemployment. As people living with HIV/AIDS (PLWHA) continue to live longer and healthier lives, interest in their vocational development has been increasing, and research in this area has expanded. State vocational rehabilitation (VR), the most widely used system of vocational services for individuals with disabilities, represents a viable service alternative for many PLWHA; however, Latinos are underserved in this arena. Research investigating VR use patterns by Latinos and PLWHA is vital for understanding factors related to service use and addressing disparities. As no known studies have specifically examined VR service use by Latino men with HIV/AIDS, the purpose of this study was to investigate variables associated with VR use as well as examine the ethnic subgroup differences among them.

Participants were 101 Latino men with HIV/AIDS recruited from AIDS service organizations and networks funded by the AIDS Institute - New York Department of Health, who took the National Working Positive Coalition - Vocational Training and Employment Survey, an instrument designed to assess the vocational-related needs of PLWHA. Andersen's Behavioral Model of Service Utilization provided a theoretical framework for identifying and investigating variables in predisposing, enabling, and need domains as they related to VR use. Logistic regression was used to identify variables predictive of VR use with a hierarchical approach to the analysis to determine changes in model significance when variables were added in blocks per variable domains.

Chi Square analyses found significant differences between VR users and non-VR users on knowledge of VR, and on racial identification between ethnic subgroups. At least one variable

from each domain was statistically significant in the regression model and found to be predictive of VR use. Puerto Rican ethnicity, having knowledge of VR, and being in poverty increased odds of VR use. As confidence in ability to maintain a job increased, so did odds of VR use. Study limitations, practical implications, and future research recommendations are included

TABLE OF CONTENTS

List of Tables.....	vii
Acknowledgements.....	viii
Chapter 1. INTRODUCTION.....	1
Background and Significance.....	1
The State-Federal Vocational Rehabilitation System.....	8
Theoretical Framework.....	10
Andersen’s Behavioral Model of Service Utilization.....	11
Predisposing Characteristics.....	12
Enabling Characteristics.....	12
Need Characteristics.....	13
Chapter 2. LITERATURE REVIEW.....	15
Predisposing Characteristics.....	15
Sexual Orientation.....	15
Ethnicity.....	19
Racial Identification.....	23
Enabling Characteristics.....	25
Poverty/Income.....	26
Knowledge of Services.....	28
Receipt of Public Benefits.....	30
Need Characteristics.....	33
General Health Perception.....	33
Need for Vocational Assistance.....	36
Confidence in Job Seeking Skills.....	36
Confidence in Maintaining a Job.....	38
Current Study.....	41
Research Questions.....	41
Study Hypotheses.....	42
Chapter 3. METHODOLOGY.....	44
Participants.....	44
Procedures.....	45
Recruitment and Administration.....	45
Instrumentation.....	45
National Working Positive Coalition-Vocational Training and Employment Survey.....	45
MOS-HIV Health Survey.....	46
Variable Definitions and Measurement.....	47
Use of VR Services.....	48
Sexual Orientation.....	48
Ethnicity.....	48
Racial Identification.....	48
Poverty/Income.....	49

Knowledge of Services.....	49
Receipt of Public Benefits.....	49
General Health Perception.....	49
Confidence in Job Seeking Skills.....	50
Confidence in Maintaining a Job.....	50
Statistical Analysis.....	50
Descriptive Statistics.....	51
Bivariate Analyses.....	51
Logistic Regression.....	52
Chapter 4. RESULTS.....	54
Characteristics of the Sample.....	54
Outcome Variable.....	55
Predictor Variables.....	55
Predisposing Variables.....	55
Enabling Variables.....	57
Need Variables.....	58
Bivariate Analyses.....	59
Logistic Regression Analysis.....	63
Ethnic Subgroup Differences.....	68
Chapter 5. DISCUSSION.....	71
Study Findings.....	71
Descriptive Statistics.....	71
Differences between VR and Non-VR Users.....	76
Variables Predictive of VR Use.....	76
Ethnic Subgroup Differences.....	79
Usefulness of Andersen’s Model.....	80
Study Limitations.....	81
Implications for Practice.....	83
Recommendations for Future research.....	88
Conclusion.....	91
REFERENCES.....	93
APPENDIX A: Survey Items Measuring Variables in the Study.....	115
APPENDIX B: Other Descriptive Variable Survey Items.....	119

LIST OF TABLES

Table 1: Descriptive Statistics for Outcome Variable.....	55
Table 2: Descriptive Statistics for Predisposing Variables.....	57
Table 3: Descriptive Statistics for Enabling Variables.....	58
Table 4: Descriptive Statistics for Need Variables.....	59
Table 5: Bivariate Analyses of Predisposing Variables and Use of VR.....	61
Table 6: Bivariate Analyses of Enabling Variables and Use of VR.....	62
Table 7: Bivariate Analyses of Need Variables and Use of VR.....	62
Table 8: Correlations among Predisposing, Enabling, and Need Variables.....	64
Table 9: Correlations between Predisposing and Enabling Variables.....	65
Table 10: Correlations between Predisposing and Need Variables.....	65
Table 11: Correlations between Enabling and Need Variables.....	66
Table 12: Logistic Regression Analysis – Use of VR.....	68
Table 13: Bivariate Analyses of Predisposing Variables and Ethnic Subgroups.....	69
Table 14: Bivariate Analyses of Enabling Variables and Ethnic Subgroups.....	70
Table 15: Bivariate Analyses of Predisposing Variables and Ethnic Subgroups.....	70

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CHAPTER I: INTRODUCTION

Background and Significance

As the fastest growing of the minority populations in the United States, the Latino population is expected to continue to grow with projections to approximately 15-20% of the United States population by the year 2010 (Marotta & Garcia, 2003; U.S. Census Bureau, 2006a). The 2005 U. S. Census estimates placed Latinos at approximately 14% of the population, not including the almost four million residents of Puerto Rico (U.S. Census Bureau, 2006b). Approximately 51 million Americans have a disability and, of these, more than half of are considered severe (U.S. Census Bureau, 2006c). Latinos comprise a significant percentage of individuals with disabilities. Rates for individuals with severe disabilities in the Latino population are similar to those of White, non-Latino Americans, approximating 12% of the total Latino population (Marotta & Garcia, 2003). Overall, approximately one in five Latinos has some form of disability (Moore, Giesen, & Cavanaugh, 2005). In New York State, Latinos represented approximately 16% of the population as of 2006 (Pew Hispanic Center, 2008); however, their overall rates of disability tend to be lower than the national average, falling at approximately 15% of the population (Steele, 2005).

Human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) is a potentially disabling condition that affects people of all ethnicities; however, the epidemiology and demographics of the disease have shifted over the last 25 years and now specifically include many more Latinos (Centers for Disease Control [CDC], 2007a). Latinos, in fact, comprise a significant percentage of individuals with HIV/AIDS. According to the CDC, both HIV and AIDS disproportionately affect the Latino population, as this group comprises approximately 17% of new HIV and 19% of new AIDS cases (CDC, 2008a). Men are also disproportionately

affected by HIV/AIDS, as the ratio of men to women with HIV/AIDS is almost three to one (CDC, 2007a). Men who have sex with men (MSM) continue to be the most affected by HIV/AIDS, as this population makes up more than two thirds of all men living with the disease in the U.S. (CDC, 2007b). Overall, approximately 17% of people living with HIV/AIDS (PLWHA) in the United States are Latino, and the majority of these individuals (approximately 80%) are men (CDC, 2008a; National Alliance of State and Territorial AIDS Directors [NASTAD], 2004). In New York State, Latinos make up over 30% of PLWHA, although the ratio of men to women tends to be lower (approximately two to one; New York State Department of Health, 2008). In addition, New York State is the main epicenter of HIV/AIDS in the United States as rates for both HIV and AIDS cases surpass all other states (CDC, 2008b), and it is one of top five states with the highest Latino AIDS rates per capita (NASTAD).

Like other disabling conditions, HIV/AIDS has a significant impact on the vocational development of people living with this disease, including considerable unemployment (Conyers, 2004a; Dray-Spira et al., 2005; Razzano & Hamilton, 2005). Many individuals with HIV/AIDS develop disabilities that qualify them for services to assist with vocational development (Conyers & Datti, 2008a). The most notable of these type services is within the state-federal vocational rehabilitation (VR) system, which is the most widely used system of services for individuals with disabilities (Wilson, 2000). Use of VR services results in the procurement of work for many individuals with disabilities, and it has been shown to increase chances of successful employment for those who are eligible and actually use the services (Hayward & Schmidt-Davis, 2003). In a research study for the Rehabilitation Services Administration (RSA), for example, Hayward and Schmidt-Davis found that only 27% of persons who were eligible for VR services but who did not use them were working after one year. This compared to 83% of persons who

participated and obtained an employment outcome (Hayward & Schmidt-Davis). In addition, many PLWHA who utilize VR services become employed. In fiscal year 2008 for example, 42% of PLWHA who used services were working after exiting the program (M. Misrok, personal communication, June 2, 2009). Given VR's prominence and its potential benefit to people with disabilities, as well as the significant population of Latino men with disabilities such as HIV/AIDS, further information is needed regarding the utilization of these services by Latino men with the disease.

While many individuals belonging to the Latino cultural group need or would benefit from VR, this population tends to be underserved in the VR realm (Wilson, 2005; Zea, Quesada, & Belgrave, 1994). Further, there is a general consensus among researchers that Latinos, like other minority populations, receive worse medical and psychosocial treatment than majority groups (Vega et al., 2007), and Latinos with HIV/AIDS have been shown to receive less HIV-related services (Kilbourne et al., 2002). Regarding vocational rehabilitation services, outcomes for Latinos using these services tend to be less favorable (Wilson, 2005). These outcomes are especially problematic for Latinos with disabilities since unemployment rates for this population remain disproportionately high (Marotta & Garcia, 2003). Further, several recent studies support the issue of unemployment and underemployment of PLWHA (e.g., Blalock, McDaniel, & Farmer, 2002; Burns, Young, & Maniss, 2006; Maguire, McNally, Britton, Werth, & Borges, 2008), including Latino individuals with HIV/AIDS (Burns, Young, & Maniss, 2007). Limited use of VR services and less favorable outcomes may be keeping many Latino men with HIV/AIDS out of the workforce longer or indefinitely.

There is a dearth of quality research concerning Latinos' use of rehabilitation services (Wilson, 2005). Further, few studies to date have explored the impact of HIV/AIDS on the

Latino population, particularly in terms of employment or VR issues (Burns et al., 2007); therefore, information regarding the factors that need to be addressed to improve the situation is scarce. Despite the available literature on the prevalence of HIV/AIDS within Latino male culture and the benefits of VR services for employment and other vocational development assistance, the patterns of use by HIV-positive Latino men and factors that affect it remain unclear. Considering the propensity for HIV/AIDS to negatively affect work status (Conyers, 2004a), further research is needed to better understand issues encountered by Latino men with the disease in terms of VR service use so that more culturally appropriate outreach and services can be made available and provided.

The main goal of this study was to better understand variables associated with use of VR services among Latino men with HIV/AIDS. Variables such as sexual orientation, ethnic subgroup membership (e.g., Mexican, Puerto Rican, Cuban), racial identification, poverty/income, knowledge of VR services, receipt of public benefits (e.g., Supplemental Security Income [SSI], Social Security Disability Insurance [SSDI]), perception of health, and confidence in ability to obtain and maintain employment each may affect VR service utilization for Latino men with HIV/AIDS. Following a brief introduction to these variables, an overview of the state-federal VR system will be presented along with the theoretical framework that guided this study.

As noted above, men who have sex with men (MSM) are the most affected by HIV/AIDS (CDC, 2007b). This term encompasses not only gay and bisexual men, but any men who have sex with other men, regardless of sexual orientation identity (CDC, 2007b). Nonetheless, this term suggests that there are a significant number of men who identify as gay or bisexual who are HIV-positive. In terms of human service utilization, while gay and lesbian individuals tend to use

counseling services more frequently than heterosexual individuals, some studies suggest that non-heterosexual men, including Latino gay and bisexual men and those with HIV/AIDS, have differing patterns of use including a tendency for underutilization (Hays, Catania, McKusick, & Coates, 1990; Willging, Salvador, & Kano, 2006).

Regarding Latino ethnicity, it is important to note that Latino culture is a diverse one with several subgroups (CDC, 2002a; Zea, Reisen, & Díaz, 2003). The three largest Latino subgroups in terms of U. S. population are Mexican, Puerto Rican, and Cubans (Marotta & Garcia, 2003; Moore et al., 2005). While each subgroup may share common features, most notably the Spanish language, there are significant within group differences, including varying rates for HIV/AIDS among subgroups (CDC, 2002b; CDC, 2007b) and differing human service use patterns (Durdin & Hummer, 2006; Harris, Edlund, & Larson, 2005).

In addition, Latino culture is diverse in terms of race, as Latinos can belong to any race (Marotta & Garcia, 2003). Within group differences in terms of racial identification of Latinos are infrequently addressed in the rehabilitation counseling literature, and few investigations separate this population into racial categories apart from other racial populations (Wilson, 2005). However, some studies suggest that racial identification is correlated with service utilization (e.g., Wilson, 2005), and many rehabilitation and related service use studies suggest that individuals who identify as Black tend to be underserved in terms of the human services as compared to Whites (see Wilson & Senices, 2008 for a review).

Poverty is another factor that significantly affects both Latinos (U.S. Census Bureau, 2008b) and PLWHA (CDC, 2007c). Several studies support the negative effects that poverty and low income tend to have on service use, including for Latinos (e.g., Alegria et al., 2002; Flores, Bauchner, Feinstein, & Nguyen, 1999) and PLWHA (Conyers & Datti, 2008a; Hergenrather,

Rhodes, & Clark, 2004). Further, as noted by the Health Resources and Services Administration (HRSA; n.d.), poverty in the Latino community may be negatively related to awareness of and access to human services.

In terms of VR service knowledge, there is a dearth of literature that addresses this issue within both the Latino and PLWHA populations; therefore, it is an important factor in which to gain more understanding. While some studies address limited VR service use by Latinos (e.g., Wilson, 2005) and PLWHA (e.g., Conyers & Datti, 2008a; Hergenrather, et al., 2004), studies measuring Latinos knowledge of VR services are rare, as only two studies were located in the literature that directly measured this variable (Hernandez et al., 2006; Santiago, Villarruel, & Leahy, 1996).

Receipt of public benefits can also affect use of vocational services geared toward achieving employment outcomes, such as state-federal VR. People with disabilities are often reluctant to become employed for fear of jeopardizing disability income from SSI and SSDI and health care benefits (i.e., Medicare or Medicaid) that often accompany them (National Council on Disability, 2007). PLWHA may be especially vulnerable to this fear given their medical conditions tend to be episodic and require expensive medications that are often necessary to maintain their health (Conyers & Datti, 2008a). Further, while many Latinos may have difficulty qualifying for benefits due to factors such as immigration status and having past employment in non-Social Security covered jobs, Latinos are proportionately more likely than non-Latino Whites or Blacks to receive SSDI benefits (National Council of La Raza, 2005).

Individual perception of health may affect service utilization as well, and there tends to be differences among ethnic groups and PLWHA. According to the *National Health Interview Survey*, for example, Latino individuals more frequently rate their health status as fair to poor

consistently across selected states as compared to non-Latino Whites (CDC, 2002b). Further, some studies suggest that within the three largest Latino subgroups, there are significant differences in terms health self-ratings (e.g., CDC, 2002b). In terms of employment issues for PLWHA, studies have shown that health perception affects employment directions (e.g., Razzano & Hamilton, 2005) in that the better the individuals' perceive their health the more likely they are to be employed. Since VR services are specifically geared toward achieving employment outcomes, it is likely that health perception may affect access to and use of these services.

Confidence in job seeking skills and ability to maintain employment given an HIV/AIDS diagnosis may also factor in to individuals' decisions to use VR services. For Latinos, much research suggests that the population tends to use personal contacts as opposed to professional ones for job seeking assistance (e.g., Elliott, 2001; Livingston, 2006; Smith, 2001); however, while this can be an effective method, no studies were located that measured Latinos' confidence in their ability to locate work. Most studies investigating people with disabilities such as HIV/AIDS indicate limitations in job seeking skills (e.g., Hergenrather et al., 2004; Hergenrather & Rhodes, 2008; Sowell et al., 2001) and underutilization of accommodations, which may be needed to maintain work (e.g., Baldrige & Veiga, 2001; Conyers & Boomer, 2005; Hergenrather, Rhodes, Turner, & Barlow, 2008). No studies were located that specifically measured Latinos' confidence in ability to maintain work, and literature regarding these issues for PLWHA is quite sparse. Since individuals' confidence in their skills and abilities in these areas may be related to obtaining and maintaining work, they are important factors to consider regarding the use of services such as VR.

The State-Federal Vocational Rehabilitation System

The state-federal VR program is provided by federal grants to states under the Rehabilitation Act (U.S. Department of Education, n.d.). Services provided typically entail vocational assistance to individuals with disabilities with a goal of obtaining and/or maintaining gainful employment (Wilson, Turner, Liu, Harley, & Alston; 2002; U. S. Department of Education). Eligibility requires that the individual has a disability that necessitates vocational rehabilitation services to prepare for, obtain, or maintain employment (U.S. Department of Education). Eligible individuals are assigned vocational rehabilitation counselors who obtain personal, educational, and vocational information to assist in the preparation of an Individualized Written Rehabilitation Plan and subsequently provide services to assist individuals with achieving their vocational goals (U.S. Department of Education). Services of the program are carried out in a manner consistent with individuals' personal responsibility, self-determination, and pursuit of meaningful careers, and are based on informed choices of individuals with disabilities (U.S. Department of Education). Given the significant incidence of disability and HIV/AIDS in the Latino male population, state-federal VR services are a logical avenue for many of these individuals to gain assistance with vocational development. Both Latino individuals (Wilson, 2005) and PLWHA (Conyers & Datti, 2008a), however, tend to underutilize these services.

Although some studies document the limited use of VR services by Latinos, there is an overall lack of information examining experiences of Latinos in the VR system (Edwards & Wilson, 2005). In the rehabilitation literature, for example, some studies suggest that Latinos are more likely to be excluded from rehabilitation services or be deemed ineligible for services as compared to non-Latino clients (Quinones-Mayo, Wilson, & McGuire, 2000; Wilson, 2005).

Other studies investigate Latinos' VR access rates per specific disability (e.g., blindness, deafness, drug and alcohol use, mental retardation; Moore et al., 2005). This body of research, however, involves individuals who have applied for and/or used VR services; it does not address the population of Latinos who have not used them. Therefore, it is critical to conduct research that may identify variables that differentiate those in the Latino culture who use VR services from those who do not.

There are limited studies addressing VR services in the context of PLWHA and, of the limited studies available, it appears that access rates for PLWHA are low. For example, in a study on the unmet vocational rehabilitation needs of women with HIV/AIDS, Conyers and Datti (2008a) found that in their sample of 122 women, more than three quarters had not utilized state VR services. Hergenrather et al. (2004) found that only six of the 204 unemployed PLWHA in their sample utilized public VR services; thus suggesting that over 97% of individuals did not identify or perceive public VR services as a resource for employment assistance. A few studies have also been conducted from the perspective of public vocational rehabilitation counselors. In 2005, Hergenrather, Rhodes, and McDaniel, for example, surveyed 151 public vocational rehabilitation counselors in a southern state and found that over half had reported working with a person with HIV/AIDS. In a more recent study, Hergenrather and Rhodes (2008) surveyed 156 public vocational rehabilitation counselors in the mid-Atlantic region, and again found that over half of them reported having worked with PLWHA. Still, there is need for further research regarding access and provision of VR services to PLWHA. The RSA has initiated data collection on case closures for PLWHA (Hergenrather et al., 2004) and since 2002, the numbers of PLWHA in the VR system have been increasing. From 2002-2007, over 12,000 PLWHA have used the state-federal VR system, with an average of about 2100 each year (approximately 10%

have been Latino); however, no scholarly publications regarding these specific consumers are available to date (Y. Jung, personal communication, May 5, 2009).

In addition, few studies have explored the impact of HIV/AIDS on the Latino population, particularly in terms of employment or vocational rehabilitation issues (Burns et al., 2007), and there is a dearth of literature investigating why Latinos, particularly those with HIV/AIDS, do or do not enter the VR system. Although recent funding and initiatives have been provided for the state-federal VR system to improve services and increase outreach to Latinos and other ethnic populations (Moore et al., 2005), further investigation is warranted to more clearly identify variables that may be inhibiting or facilitating to the use of VR by Latinos with HIV/AIDS. The current study describes VR utilization by a sample of Latino men with HIV/AIDS in New York State and investigates differences between those men who have accessed VR services and those who have not based on the variables noted earlier. In addition, the study investigates the ethnic subgroup differences among the sample. The following section will describe the theoretical framework used to assist in defining and measuring those variables.

Theoretical Framework

It is common practice to utilize scientific theories to guide research and develop knowledge. In the current study, Andersen's *Behavioral Model of Service Utilization* (Andersen, 1968, 1995; Gelberg, Andersen, & Leake, 2000) provided the theoretical framework for identifying and investigating variables related to use of VR by Latino men with HIV/AIDS. Because there are many variables that may affect VR service utilization for this group and other populations, this model was utilized to provide for an integrated theoretical and empirical approach that provided a guide to identify predictor variables of VR use in the model's three domains: predisposing, enabling, and need. Variables in these domains embodied the

independent variables in the current study, and assisted in determining relationships as to the influence of these particular theoretical domains on VR use.

Andersen's Behavioral Model of Service Utilization

Andersen's model was originally developed in the late 1960s to assist in the analysis of national survey data collected by the Center for Health Administration Studies and the National Opinion Research Center (Andersen, 1968, 1995). It initially targeted the understanding of how and why families use health services, and was used to define and measure access to healthcare in order to assist in the development of policies to foster equitable access to these services (Andersen, 1995). Recently, Andersen shifted the model from families to the individual because of the difficulty in developing measures at the family level (Andersen, 1995), and several components were subsequently added to address vulnerable populations (Gelberg et al., 2000). The latter revision included vulnerable populations such as minority individuals, children, the elderly, people with chronic illnesses, individuals with disabilities, and those who live in poverty (Andersen et al., 2000; Gelberg et al.).

The key components of Andersen's model provide a useful framework for application to healthcare and other service utilization. The original model has been noted to be the most dominant of its kind in terms of research on service utilization for the past three decades (Lemming & Calsyn, 2004) and it has been used in investigating utilization of various services (e.g., mental health, alcohol treatment, occupational therapy) by diverse populations (e.g., African Americans, Latinos, homeless; Unni, 2008). The model has also been specifically applied to individuals with HIV/AIDS (e.g., Andersen et al., 2000; Smith, 1996) and to the use of state-federal VR services (e.g., Hall, 2007; Kolakowsky-Hayner, 2007).

Predisposing Characteristics

Andersen's model suggests that people's use of services is a function of: (1) their predisposition to use services, (2) factors that enable (or impede) use, and (3) their need for care (Andersen, 1968, 1995). The predisposing component suggests that some individuals are more predisposed to service utilization than others and that their propensity toward service use may be predicted prior to onset of conditions or the need for services (Andersen, 1995). Predisposing factors of the traditional model include background characteristics (e.g., gender, age), social structure variables (e.g., ethnicity, race), and health beliefs (e.g., attitudes toward services, beliefs about conditions; Andersen, 1995; Lemming & Calsyn, 2004). In the most recent model, which includes vulnerable populations, several additions have been made to the predisposing characteristics, including sexual orientation (Gelberg et al., 2000; Virgo, Risk, Spitznagel, & Price, 2004). The model suggests that, while predisposing factors are believed to be related to service utilization, they are not in and of themselves directly responsible for it (Andersen, 1995).

Enabling Characteristics

The enabling component consists of both personal and community resources that either foster or impede service utilization (Andersen, 1995). Personal resources include income, insurance coverage, knowledge of services, and accessibility to sources, while community resources involve amount and location of facilities in the community and the locale in which one lives (e.g., rural or urban; Andersen; Smith, 1996). The updated vulnerable population model includes in this domain other factors such as receipt of public benefits (Gelberg et al., 2000). Andersen posits that, although some predisposing factors help to explain service utilization, both personal and community enabling resources must be present for service utilization to take place.

Need Characteristics

The need component involves self-perceived need for services and evaluative need (e.g., from a practitioner), and is thought to be the most important component for service utilization (Andersen, 1995). Andersen posits that how people view their conditions and functioning as well as whether they judge their problems to be of sufficient importance to seek professional help are good predictors of service utilization. Andersen notes that perceived need is largely a social phenomenon that can be extensively explained by social structure and beliefs, and that this need has to be present beyond any predisposing and enabling factors in order for service utilization to take place. Examples of these include symptom level and self-reported health status (Andersen). The individually perceived need helps us to understand care-seeking, and the evaluated need helps us to understand the kind and amount of treatment that will be provided (Andersen). In Andersen's updated model, included in this domain are perceptions and evaluated needs of conditions that tend to be more relevant to vulnerable populations, including those with sexually transmitted diseases and HIV/AIDS (Gelberg et al., 2000).

In light of the need to further understand VR service use patterns of Latino men with HIV/AIDS, utilizing the components of Andersen's model as a theoretical guide for this study was helpful. The model provided a framework to more clearly understand predisposing, enabling, and need variables that may influence VR service utilization by the population. Specifically, application of the model's tenets helped to identify factors that may differentiate individuals who use VR services from those who do not and identify variables predictive of VR service use, both of which can have implications for culturally appropriate outreach, advocacy, programming, and policy on the state or federal level. The following chapter will expand upon variables noted earlier in relation to Andersen's model and develop their relationship to VR

services for Latino men with HIV/AIDS, so that these variables can be understood more completely and incorporated into a model for review and analysis.

CHAPTER II: LITERATURE REVIEW

This literature review will outline and review variables used in the current study including a rationale for variable inclusion and placement into the particular domains of the Andersen model. Variables in the predisposing domain include sexual orientation, ethnicity, and racial identification. Variables in the enabling domain include poverty/income, knowledge of vocational rehabilitation (VR) services, and receipt of public benefits. Lastly, variables in the need domain include general health perception, confidence in job seeking skills, and confidence in ability to maintain a job. Variables were selected based on available research on service utilization of Latino men and people living with HIV/AIDS (PLWHA), existing studies on VR service use by marginalized groups, as well as hypotheses by scholars in the Latino, HIV/AIDS, and rehabilitation literature.

Predisposing Characteristics

In Andersen's model, the predisposing component posits that some individuals are more likely to use services than others by nature of background characteristics and social structure variables (Andersen, 1995; Lemming & Calsyn, 2004). Andersen asserts that individuals' propensity toward service use may be predicted prior to onset of conditions or need for services based on these characteristics. The model suggests, however, that while these characteristics are believed to be related to service utilization, they are not in and of themselves directly responsible for it (Andersen). The following sections review predisposing characteristics of Latino men with HIV/AIDS used as variables in this study.

Sexual Orientation

In Andersen's updated model that includes vulnerable populations, sexual orientation is included as a predisposing background characteristic that may affect service utilization (Gelberg

et al., 2000). When considering HIV/AIDS in Latino male communities, the most common mode of HIV transmission within the population is via men having sexual contact with other men (CDC, 2004; HRSA, n.d.); thus suggesting that there are several Latino gay and bisexual men with the disease. Limited research has been conducted regarding VR service use by Latinos in general (Wilson, 2005) and those studies that are available do not specifically examine Latino men with HIV/AIDS nor examine the impact of their sexual orientation on service access and use.

Research generally suggests that gay individuals are more likely to utilize counseling and related services than heterosexual individuals (Malley & Tasker, 2007), and favorable attitudes toward service use have been found in the gay male population specifically. Simonsen, Blazina, and Watkins (2000), for example, studied gender role conflict and its effects on help seeking attitudes in gay men. In their sample of 117 gay men (87% identified as Caucasian and 8% as Latino), investigators found overall attitudes were more favorable toward seeking professional help (e.g., counseling) than in past studies examining general male populations. Another study, by Hays et al. (1990) compared gay men who were HIV-positive to those who were HIV-negative or unaware of their status in terms of help seeking behaviors. This study found that those who had HIV/AIDS sought help significantly more often than those who were HIV-negative or who did not know their status. It is important to note that these studies measured help-seeking for HIV/AIDS-related concerns, which may or may not have included employment issues. Further, the latter study was conducted prior to the advent of highly active antiretroviral therapy (HAART), with which PLWHA have become healthier and live longer (Conyers & Datti, 2008a); therefore, a study of that nature may not garner similar results today.

Some literature also exists that addresses specific needs of gay and lesbian clients in

terms of vocational rehabilitation and career services. For example, Cheng (2004) discusses the necessity for vocational rehabilitation counselors to be prepared to face challenges and barriers such as substance abuse, depression, and HIV/AIDS, as these issues tend to be higher in the gay population. Harley, Hall, and Savage (2002) offer suggestions for rehabilitation practitioners to more effectively navigate gay and lesbian clients' vocational processes. Pope, Barret, Szymanski, and Chung (2004) discuss culturally appropriate career counseling with gay clients and note the paucity of literature addressing issues of minority racial and ethnic groups within this population. These authors also discuss barriers faced by the gay population, recommend addressing issues of multiple discrimination, and argue for advocacy and social action interventions to assist the population with vocational issues.

There is limited research, however, that specifically examines Latino gay and bisexual men and service utilization. One study of note, by Siegel and Raveis (1997), examined Latino and African American gay men in New York City and their perceptions of access to HIV/AIDS-related care and services. These investigators found that both groups viewed social service organizations as disinterested in minority individuals, which perhaps may shed some light on potential approaches that Latino gay men with HIV/AIDS may take toward VR and related service utilization.

It is important to note that there are several studies focusing on Latino men's sexual orientation identity and disclosure of HIV status. Many of these studies suggest that identification with differing sexual orientations from the majority may be very challenging for Latino men as the culture tends to be high in homo-negativity (Zea et al., 2003; Zea, Reisen, Poppen, Bianchi, & Echeverry, 2005) and have strict binary gender roles (Canul & Cross, 1994). This perception suggests that sexual orientation and HIV/AIDS stigmatization may be significant

for them, and motivation to seek services such as VR may diminish. In Zea et al.'s (2005) study, for example, findings indicated that Latino gay men with HIV were selective in choosing to whom they would disclose their HIV status, but that their disclosures tended to be associated with positive psychological well-being outcomes. In an earlier study, Zea, Reisen, Poppen, Echeverry, and Bianchi (2004) found that disclosure of HIV status was associated with the target's (the one to whom the disclosure was made) knowledge of their sexual orientation. These studies, however, examined disclosure to those within a close social network and did not address professional services. One study, however, measured professional services on some level. Jernewall, Zea, Reisen, and Poppen (2005) found that Latino gay and bisexual men with HIV/AIDS were more likely to utilize complementary and alternative medicine than to use and adhere to Western medical care.

Given the dearth of literature focusing on sexual orientation and its effects on VR access and use, especially the limited information regarding Latino gay and bisexual men, this variable is an important one to explore. While research indicates more use and favorable attitudes toward counseling for the gay and lesbian population in general, the Latino male population's attitudes and use regarding this may differ. As noted, research indicates that Latinos tend to underuse services such as VR, and the stigma associated with homosexuality and HIV/AIDS within the culture may affect this further. It is important to note, however, that VR services, while they have a counseling component and may include services directly related to HIV/AIDS diagnoses, their main purpose is to provide individuals with disabilities with vocational development services (U.S. Department of Education, 1999). Oftentimes, it would not be necessary to address sexual orientation at all, and, depending on one's diagnosis, may not be necessary to address HIV status either (e.g., another disabling condition exists that qualifies one for services).

Ethnicity

In Andersen's model, ethnicity is included as a predisposing social structure variable that may affect service utilization (Andersen, 1995, Andersen et al., 2000). While Latino ethnicity in general may affect service use as compared to other ethnic or racial groups, researchers have suggested that Latinos be studied within particular subgroups (e.g., Mexican, Puerto Rican, Cuban, etc.) rather than grouped into one collective ethnic group (Umana-Taylor & Fine, 2001). According to a study by the U.S. Census Bureau (2006c), Mexican individuals make up approximately two thirds of the Latino population while Puerto Rican individuals made up approximately 9%, and Cuban individuals approximately 3.5%. In New York State, Puerto Ricans are the largest Latino group, making up 5.53% of the entire state population, while Mexicans and Cubans make up 1.37% and .33% respectively (Bose, 2006). While there may be significant differences in the subgroups in terms of service approach and utilization, there are limited studies that address such differences. Therefore, the nature of the relationship between Latino ethnicity and service utilization is unclear, particularly in terms of within group differences and with respect to PLWHA and VR service utilization.

Men in Latino subgroups tend to differ in terms of HIV/AIDS transmission modes, death rates, and HIV/AIDS health status. For example, according to the CDC (2007a), 59% of Mexican and 52% of Cuban born men reported male-to-male sexual contact as their primary cause of HIV infection. This result compares to only 17% of Puerto Rican men, as these men more frequently identify intravenous drug use as causal (CDC, 2007a). In terms of HIV/AIDS mortality, Cuban Puerto Rican American men between the ages of 25-44 were found to have higher death rates than did Mexican American men (CDC, 1993). Moreover, the percentage of men living with AIDS who are MSM is approximately 53% among Mexicans, yet only 17% among Puerto

Ricans due to the higher rate of transmission of the virus via intravenous drug use by the latter population (Zea et al., 2003).

In terms of Latino ethnicity in general and its effects on service utilization, some studies have examined this factor regarding medical health care (e.g., Durden & Hummer, 2006; Larkey, Hecht, Miller, & Alatorre, 2001; Weech-Maldonado, Fongwa, Gutierrez, & Hays, 2008) and mental health service use (see Cabassa, Zayas, & Hansen, 2002 for a review). Using a logistic regression analysis on factors affecting access to healthcare, Durden and Hummer (2006), for example, found that Latino respondents were less likely to report access to a usual source of care than non-Latino Whites. Paris, Añez, Bedregal, Andrés-Hyman, and Davidson (2005) in their study consisting of 62% Puerto Rican, 11% Mexican, 20% from “other Latin American countries” (p. 304) found similar results for counseling services, which they noted was consistent with other studies. Larkey et al. found that for medical issues, many Latinos often initially attempt self-management of symptoms, and subsequently consult friends and family members if the attempt fails; thus leaving Western practices as the last resort. Albizu-Garcia, Alegria, Freeman, and Vera (2001), in a study investigating Puerto Ricans’ use of counseling services, found that the size of a close social network was inversely related to service use in that the more close relatives the person could talk to about emotional issues, the less likely that formal care would be sought. These studies suggest that country of origin, social network status, and family orientation may affect Latino men’s access to medical, counseling, and related services. These ethnic characteristics may be reflective in terms of help seeking behaviors for employment issues as well; thus potentially affecting the use of VR services for many Latino men with HIV/AIDS.

In terms of within group differences, Durden and Hummer’s (2006) study is one of few that made a deliberate effort to compare Latino subgroups, particularly in terms of service

use. These investigators found that Puerto Ricans had the highest reported percentage of access to a regular source of medical care followed by Cuban Americans, other Latinos (those not identifying as Puerto Rican, Cuban, or Mexican), and then Mexican Americans, who had the lowest reported percentage. Harris et al. (2005) in their study on racial and ethnic differences in mental health care also looked at subgroup differences. These investigators found an overall lower use of mental health care among Mexican, Central and South American, and other Latino groups as compared to Whites. It should be noted as well, that these groups also reported lower rates of mental health problems.

The few studies that have examined VR service use for Latinos did not examine those with HIV/AIDS nor examine the impact of ethnic subgroup status on service use. Research that has been conducted, however, suggests that Latinos in general tend to be an underserved population when it comes to VR services, and outcomes for the population tend to be less favorable (Wilson, 2005; Zea et al., 1994). Some studies in the rehabilitation literature suggest that Latinos are more likely to be excluded from rehabilitation services or be deemed ineligible for rehabilitation services as compared to non-minority clients (Quinones-Mayo et al., 2000; Wilson, 2005). Interestingly, one study found Latinos to be more likely to be accepted into VR than non-Latinos (Wilson & Senices, 2005). This study measured racial identification differences for Latinos, and found that the vast majority (91.5%) identified as White. The investigators infer that it is possible that Latino individuals in their sample may have benefitted from White skin color and thus were more likely to be accepted for VR services, as this trend has been noted in rehabilitation literature. The aforementioned studies, however, describe only those individuals who applied for and/or used VR services, but do not address the population who have not used them.

Other studies offer more specific information on factors that are seen as barriers to VR and employment for Latinos. For example, in a qualitative study involving 45 Latinos with disabilities (29 of which had used VR services), Hernandez, et al. (2006) found that participants reported barriers such as the VR systems' lack of responsiveness, counselors' lack of collaboration, and counselors' prejudicial attitudes on the basis of their ethnic minority status. This study, however, did not address within group differences, make comparisons between Latinos and other populations, or address PLWHA.

When discussing within group differences in the Latino populations' use of services, it is important to address on some level the socioeconomic history of the subgroups as it pertains to possible effects on service utilization. For example, Cubans have the highest rate of naturalization, while Mexicans have the lowest as compared to other Latinos (Durden & Hummer, 2006; Novello, Wise, & Kleiman, 1991). U.S. citizens, permanent residents, and those with valid work permits have access to services such as VR, whereas non-citizens or those in the country illegally do not, since individuals need to be legally eligible to work in order to be eligible for the services (California Department of Vocational Rehabilitation, 2008; Mastandrea, n.d.). Poverty can also affect access, and has been associated with reduced knowledge and use of services by the Latino population (HRSA, n.d.). In terms of socioeconomic status, Cubans tend to be the least affected by poverty and to be the most advantaged (i.e., higher education level and lower unemployment rates) as opposed to Puerto Ricans, and Mexicans, who are the least advantaged (Durden & Hummer, 2006; Ramirez & de la Cruz, 2002). According to the U.S. Census data, Puerto Ricans have higher rates of individuals below the poverty line than other Latino groups (Ramirez & de la Cruz). Further, as opposed to Mexico (Barraza-Llorens, Bertozzi, Gonzalez-Pier, & Gutierrez, 2002) and Puerto Rico (University of Puerto Rico, n.d.),

where many citizens go uninsured, Cuba's healthcare system is characterized by its government taking full responsibility for the health care of its citizens (Farag, 2000); thus Cubans, especially those who immigrated, may be more used to and inclined to seek out adequate health and related care as opposed to the other subgroups.

Racial Identification

Race is included as a predisposing social structure variable that may affect service utilization in Andersen's model as well (Andersen, 1995; Andersen et al., 2000). Racial identification is important to consider in studies regarding Latinos, since Latinos can belong to any race (Marotta & Garcia, 2003) and many may have differences in racial identification (Golash-Boza & Darity, 2008; Logan, 2003). In an in-depth study analyzing results of two major Latino data sets (the 1989 *Latino National Political Survey* and the 2002 *National Survey of Latinos*), Golash-Boza and Darity found that more Latino respondents identified as White as opposed to Black. It is important to note, however, that many Latinos avoid race questions or choose an ethnicity as an answer to them, as noted in Golash-Boza and Darity's study as well as in the 2000 Census data. In the latter, in fact, 47% of Latinos opted out of the race question (Oropesa, Landale, & Greif, 2008). The main factor found to be significant in Golash-Boza and Darity's analysis in terms of racial identification was skin color, as darker-skinned Latinos were consistently more likely to identify as Black or Other than as White of all other variables.

Most studies in the rehabilitation counseling literature do not address racial differences among Latinos (Wilson, 2005), thus potentially neglecting many important variations and characteristics of the different groups. Research has indicated, for example, that Latinos who identify as White differ from Latinos who identify as Black in several ways including unemployment and residential locale (Logan, 2003). Logan found that Latinos who identify as

Black tend to be the most segregated from White non-Latinos than other Latino populations, and also tend to reside in more predominantly Black neighborhoods. Furthermore, issues encountered by Latino individuals who identify as White may differ greatly to those encountered by Latino individuals who identify as Black. For example, as noted by Logan, Latinos who identify as Black tend to have higher poverty and higher unemployment rates than Latinos who identify as White. Factors such as these may affect service use; therefore it is an important component to consider when examining Latino ethnicity.

In terms of within group differences, in a large study of 1736 Latinos, Espino and Franz (2002) found that Cuban individuals rated their skin color significantly lighter than did Mexican and Puerto Rican individuals. These investigators also found that lighter-skinned individuals had higher occupational prestige than darker-skinned individuals with the exception of Puerto Ricans, whose highest occupational prestige results belonged to medium-skinned individuals. Espino and Franz also found significant discrimination issues based on Latinos' skin color. Investigators found that darker-skinned Mexican and Cuban individuals experienced more discrimination in the labor market than lighter-skinned counterparts. Accordingly, this result supported findings of previous analyses based on the 1979 National Chicano Political Survey, and that it indicated that many Latinos continue to face discrimination, which may affect VR service access and use.

Racial identification issues arise in rehabilitation service provision as well (Wilson & Senices, 2008). Recall that some studies in the rehabilitation literature suggest that Latinos are more likely to be excluded from rehabilitation services or be deemed ineligible for rehabilitation services as compared to non-minority clients (Quinones-Mayo et al., 2000; Wilson, 2005). In Wilson's (2005) study, it was found that Latinos who identified as European American (almost

83% of the Latinos in this large sample of VR consumers using the national RSA 911 database) tended to be accepted and closed more successfully than Latinos who identified as African American. Other studies have found similar results. For example, Kolakowsky-Hayner (2007) used RSA 911 data and a variation on Andersen's model to examine racial disparities in VR acceptance for people with brain injuries. Although the investigator did not address the racial identification of the Latino individuals, she found that Black individuals had lower acceptance rates than Whites and that Latinos had lower acceptance rates than non-Latinos.

Wilson and Senices (2008) perhaps shed some light on at least part of this issue with their discussion on colorism. The authors note a repetitive theme in vocational rehabilitation and related service use studies that "the darker one's phenotype (i.e., hue/skin color), the more difficult it is to access human services for people with disabilities" (p. 176); thus suggesting that racial identification and skin color may indeed affect use of VR services. In light of its limited investigation in the rehabilitation literature and its potential for effects on use of VR services for Latino men with HIV/AIDS, racial identification is an important factor to consider in research studies concerning Latinos.

Enabling Characteristics

Andersen (1995) includes personal resources (e.g., income, insurance coverage, knowledge of and accessibility to services) believed to affect service utilization in the enabling component of the model. Andersen posits that, although some predisposing factors help to explain service utilization, personal resources must be present for service utilization to take place. The current study examined personal resource variables considered relevant to VR services among Latino men with HIV/AIDS. These enabling characteristics are described in the next sections.

Poverty/Income

In Andersen's model, income level is included under the enabling component as a factor that either fosters or impedes service utilization (Andersen, 1995). As compared to the non-minority population, Latinos experience a high poverty rate, falling at about 21.5% as of 2007 (U.S. Census Bureau, 2008a). Comparisons among Latino subgroups show that 26.1% of all Puerto Rican individuals live in poverty as compared to 22.8% of Mexicans and 16.5% of Cubans (Ramirez & de la Cruz, 2002). Further, Latinos have lower educational attainment levels and are more likely to be unemployed than non-minority Americans (Ramirez & de la Cruz, 2002), thus rendering them more vulnerable to poverty. With the large proportion of Latinos at the poverty level, many may not be able to afford, have access to, or even be aware of potentially helpful services that non-minority individuals may have at their disposal, such as VR.

In fact, poverty has been shown to be a significant factor for limiting access to services for Latinos as compared to other groups in several studies. For example, Alegria et al. (2002), in their study of over 7000 respondents (695 Latino) of the *National Comorbidity Study*, found that poor Latinos were significantly less likely than poor non-Latinos to use mental health services, which they noted was consistent with prior studies. Flores, et al. (1999), using the *National Health Interview Surveys* data sets, found that poverty was significantly associated with excessive intervals between doctor visits yet was also associated with greater numbers of physician visits. Interestingly, investigators examined Latino subgroups differences and found that Mexican ethnicity was a significant predictor of fewer physician visits during the past year whereas Cuban ethnicity was not, and Puerto Rican ethnicity was significantly associated with a greater number of physician visits.

The effects of low income and poverty and their relation to disability status are addressed

in the professional counseling and rehabilitation literature. Research indicates that presence of a disability among individuals ages 25 to 64 triples the risk of also being in poverty (McNeil, 2001). In fact, people with disabilities are almost twice as likely as people without disabilities to have annual household incomes of \$15,000 or less, with additional adverse socioeconomic conditions likely affecting those who are ethnic minority (American Psychological Association [APA], 2007). Further, the effects of low income and poverty directly affect individuals with HIV/AIDS (Conyers & Datti, 2008a). Indeed the effects of poverty and its relationship to PLWHA is well documented in the literature (e.g., CDC, 2007c; Ezzy, De Visser, & Bartos, 1999; Stillwaggon, 2006). Moreover, poverty is a significant factor among Latino men with HIV/AIDS, and studies investigating this issue have appeared in the literature. For example, the subgroup of Latino men who have sex with men (MSM) is a population that is significantly affected by HIV/AIDS (CDC, 2004). In a study cited by the CDC, it was noted that 47% of Mexican-born MSM and 59% of Puerto Rican-born MSM had annual incomes of less than \$10,000 (CDC, 2004). It is possible that these men are unaware of support systems outside of their communities, as education levels, access to services, and opportunities for awareness within these populations each tend to be limited (HRSA, n.d.).

Concerning VR services, while VR agencies typically serve individuals who have low income or who are in poverty (Daniels, 2007; Lustig & Strauser, 2007) studies have shown that poverty is related to difficulty in accessing services such as VR (e.g., Schleiter, Statham, & Reinders, 2005). While most state-federal VR services are free regardless of income level and do not require insurance (U. S. Department of Education, 1999), and many Latino men with HIV/AIDS may be eligible for them, factors such as poverty and containment in poor areas may affect awareness and use of services among the population. Therefore, data regarding this

population's poverty levels and its relation to VR service use were measured in this study as well.

Knowledge of Services

In Andersen's model, enabling characteristics that either foster or impede service utilization include the personal knowledge of and means to obtain/make use of services (Andersen, 1995). An important issue for Latino men with HIV/AIDS regarding VR services lies in the populations' knowledge about and access to the services. Several studies indicate that PLWHA tend to have limited knowledge of and lower access rates to VR services. For example, Hergenrather et al. (2004) found that only 3% of their sample utilized public VR services, and Conyers and Datti (2008a) found that more than three quarters of their sample had not utilized state VR services. Although these studies did not directly investigate knowledge of state VR services, the results are quite striking. Datti (2008) conducted a recent pilot study in an AIDS service organization (ASO) in the Northeast that evaluated an employment/career group for men with HIV/AIDS. The investigator directly measured knowledge of VR services and found that only one of the six participants in the program was even aware of the services.

In terms of Latinos knowledge of VR services, one study was located that measured Latinos knowledge of the rehabilitation process and community rehabilitation programs (CRPs), and only two studies were located that directly measured Latinos knowledge of VR. In their 2005 qualitative study, Mueller-Reed, Holloway, Leung, & Menz found that CRP and state VR staff ranked lack of knowledge of the rehabilitation process as a major barrier to Latino participation in CRPs. Hernandez et al. (2006), in a qualitative study on Latino perspectives in VR and the Ticket to Work program, found that of the 45 Latino participants, about half indicated they had heard of VR; however, it should be noted that participants in the sample were recruited from

rehabilitation hospitals and disability-related organizations, perhaps making it more likely that they would have had exposure to VR service information. Santiago et al. (1996) examined Latinos with disabilities and their access to VR in Michigan, and found that 18% of their sample (n = 124) were using VR services at the time of the study, while another 18% had used them in the past. Surprisingly, although several reasons were noted for not seeking VR (such as not desiring or needing services and disapproval of family and friends), only 3% of Santiago et al.'s sample reported not knowing where to go. These authors note, however, that historically, relatively few Latinos participate in rehabilitation programs and they discuss the limited studies that empirically assess factors that shape demands for and access to rehabilitation services for this population.

Even if Latino men with HIV/AIDS utilize the services of other entities for PLWHA, such as ASOs, chances for increases in their knowledge and access to VR may not improve. Although ASOs, which provide medical care support services to PLWHA (typically to minority and poor populations), have recently been targeting the Latino population for services (HRSA, n.d.), they generally do not provide vocational rehabilitation or similar services (Conyers & Datti, 2008a). Further, ASO staff members tend to know little about vocational rehabilitation services (Goldblum & Kohlenberg, 2005); therefore, they may not be able to assist their clients with such issues, and clients may be less likely to receive information about VR services.

Some recent outreach measures regarding VR, however, are encouraging. For example, for fiscal year 2001, the U. S. Department of Education provided grant funding for the development of a national technical assistance center for individuals with disabilities focusing on Latinos (Heumann, 2000). Soon after, *Proyecto Vision*, the only national technical assistance center on employment issues for Latinos with disabilities was provided a grant from the

Department of Education in order to target the employment issues of the population (Proyecto Vision, n.d.). One of the main focuses of the program is to improve VR services for Latinos via outreach and increased measures for accessibility (Proyecto Vision). Still, the knowledge that Latino men with HIV/AIDS have regarding VR services is unclear at best; therefore it is examined in this study as well.

Receipt of Public Benefits

Andersen's updated vulnerable population model includes receipt of public benefits (e.g., Supplemental Security Income [SSI], Social Security Disability Income [SSDI]) as an enabling characteristic that may affect service utilization (Gelberg et al., 2000). Receipt of public benefits can be an important issue for PLWHA when considering employment or vocational services such as VR. People with disabilities such as HIV/AIDS are often reluctant to become employed for fear of jeopardizing disability income from SSI and SSDI and the health care systems (i.e., Medicare or Medicaid) that often accompany them (National Council on Disability, 2007) as these benefits often represent a stable source of income that can be affected by one's employment status. As such, it may become a significant factor when considering obtaining or maintaining work, changing jobs, or earning more/less money for many individuals.

SSI provides cash assistance to individuals with disabilities and elderly people with limited income and resources (Social Security Administration [SSA], 2008). The federally established monthly benefit amount for 2009 was \$674 for an individual (\$1011 for a couple), and the benefit is reduced for countable earned and unearned income (SSA, 2009a; SSA, 2008). Many recipients rely on SSI for at least 90% of their personal income, and almost all (96%) of SSI recipients receive Medicaid healthcare coverage (SSA, 2008). The SSDI program pays monetary benefits to individuals with disabilities who have become insured by working in Social

Security covered jobs, and benefits are based on previous earnings and vary among individuals (SSA, 2008). Several SSDI recipients also receive Medicare health coverage, but some have private insurance or Medicaid (SSA, 2008). Many SSDI beneficiaries rely on their benefits for 75% or more of their personal income (SSA, 2008). About 20% of SSI and 8% of SSDI beneficiaries are Latino, with more men proportionately receiving SSDI (SSA, 2008). Due to higher rates of disability and longer life expectancies, Latinos are more likely than other groups to receive Social Security benefits (National Council of La Raza, 2005; U. S. General Accounting Office, 2003).

Receipt of public benefits such as SSI or SSDI may affect VR service use for PLWHA as they are often seen as a deterrent to employment, and are therefore likely to negatively affect VR service use (Conyers & Datti, 2008a; Hall, 2007). However, receipt of these benefits may also serve as a motivator to seek services because recipients are generally presumed eligible for VR (U.S. Department of Education, 1999). It is also important to note, however, that with the recent advancements in medical treatment (e.g., HAART) it has become increasingly difficult for PLWHA to qualify for SSI and SSDI benefits (Conyers & Datti, 2008b) and thus VR services. Eligibility for VR services requires that the individual have a disability that necessitates vocational rehabilitation services to prepare for, obtain, or maintain employment (U.S. Department of Education, n.d.). Even though PLWHA have what is considered a chronic illness, their functional limitations may not be severe enough to qualify for VR services, and in state VR systems, including New York, priority is given to individuals with the most significant disabilities if resources are not available to serve all eligible individuals (U.S. Department of Education, 2008). Further, since HIV/AIDS tends to cause episodic health changes that vary significantly among individuals (Conyers, 2004a), it is common for one individual with

HIV/AIDS to have no or limited health and functional issues but for another to have significantly deteriorating health; and either may have episodes of each pattern (Conyers & Datti, 2008a). In other words, while several are eligible, various PLWHA at various times simply may not be disabled enough to qualify for VR services; however, potential for eligibility will likely be increased if they receive SSI or SSDI benefits.

Consumers' negative perceptions and beliefs about the relationship of employment on their public benefits are addressed in the HIV/AIDS literature. It is common for PLWHA to be concerned about jeopardizing their access to health insurance or fear regaining their disability cash benefits when considering work (Siegel, Karus, & Dean, 2004). PLWHA may be especially vulnerable to this fear given their medical conditions tend to be episodic and given the need for expensive medications that are often necessary to maintain health (Conyers & Datti, 2008a). These concerns emerged in a few studies. For example, of the 122 unemployed respondents of the *National Working Positive Coalition Employment Needs Survey* for PLWHA, 73% believed that they would lose their disability benefits if they worked (Conyers & Datti, 2008a). In a qualitative study incorporating focus groups of PLWHA, Conyers (2004b) found that fear of losing benefits was seen as a barrier to employment by many participants in her sample. In another study of PLWHA who were in the process of returning to work, Glenn, Ford, Moore, and Hollar (2003) found that fear of losing benefits was one of the highest ranked concerns relating to returning to work or staying employed.

It is important to note, however, that many individuals are not aware that they may indeed be able to keep cash and health benefits as they consider work (Olney, 2007). This may in part explain the dismal proportions of SSI and SSDI recipients who return to work and exit these programs. It is estimated that less than half of one percent of recipients actually exit these

programs each year to work (Marini, 2001). In addition, studies have shown that, even though they are presumed eligible for services, significantly high numbers of Social Security benefit recipients do not receive VR services. For example, Kennedy, Olney, Richer and Newsom (2002) found that 70% of their sample of program applicants and beneficiaries had never received VR services. With the evidence of an association between receipt of public benefits and employment and use of employment services such as VR, it is important to examine this issue further, especially among specific groups such as Latino men with HIV/AIDS; therefore it is included as a variable in this study.

Need Characteristics

In Andersen's model, need characteristics for service utilization involve a self-perceived need for services as well as an evaluated need (e.g., from a practitioner), and are thought to be the most important and immediate cause of service utilization (Andersen, 1968, 1995). In the current study, self-perceived needs are addressed; however, evaluative needs are not considered since evaluation from a practitioner (i.e., vocational rehabilitation counselor) would not take place unless the individual used VR services, and the scope of the study extends to those who have used VR and those who have not. The following sections review the need characteristics of Latino men with HIV/AIDS used as variables in this study.

General Health Perception

In Andersen's model, self-perceived health status is included under the need component as a factor related to service utilization (Andersen, 1995). Perception of health is an important aspect to consider regarding VR and employment issues for PLWHA (Razzano & Hamilton, 2005). This variable has received some attention in the literature regarding PLWHA and Latinos' use of various services, and may impact use of VR. Regarding employment issues for PLWHA,

in a study utilizing the *Medical Outcomes Study-HIV Health Survey* (MOS-HIV 30), Razzano and Hamilton measured differences in perceptions of physical and mental health functioning and quality of life among PLWHA based on employment status (i.e., employed or not). Investigators found that employed participants rated their overall health functioning as more positive than unemployed participants. Specifically for Latinos with HIV/AIDS, Burns et al. (2007) in their study on factors associated with employment for this population found that those who were employed demonstrated significantly greater health ratings and internal health control beliefs as compared to those who were not employed. The authors noted that to their knowledge, this investigation was the first to report on the latter association.

There are also specific issues present in the general Latino population that deserve attention in this area. For example, some studies indicate that within the three largest Latino subgroups, there are differences in terms health self-ratings (e.g., CDC, 2002b). In this study by the CDC, the investigators found that higher percentages of Mexican and Puerto Rican individuals rated their health status as fair or poor as compared to Cuban individuals. In addition, several studies have found that Latinos tend to be fatalistic toward health and disability issues (e.g., Urizar & Sears 2006; Weitzel, Hudak, Becker, Waller, & Stuijbergen, 1994), meaning that they may perceive their health as something they have little control over. In an exploratory study on health promotion and beliefs among White, Latino, and Black men, for example, Weitzel, et al. (1994) found that Latino men scored lowest on the health responsibility subscale of the *Health-Promoting Lifestyle Profile*. Further, the investigators found that Latino men scored higher than White men on the external scales of the *Multidimensional Health Locus of Control*.

Perception of health and its effects on return to work and work readiness has been reviewed by various studies regarding people with disabilities. For example, Li et al. (2006)

measured self perception of health status by administering the *Short Form Health Survey* (SF-36) to workers with musculoskeletal injuries and on long-term sick leave. After providing a work readiness program to the experimental group, they found that workers who received the program showed improvements in self-perceived health and seemed more ready to return to work (as shown by their scores changes) than the control group. Cheng and Li-Tsang (2005) also studied health perception and work readiness and found similar results. In their study examining injured workers, investigators found that self-perceived pain and physical functioning were significant factors influencing return to work readiness. Indirectly, Roessler, Williams, Featherston, and Featherston (2006) examined health perception and use of VR services among 51 individuals invited to use the Ticket to Work program, and found that 84% indicated that disability limitations were a barrier in returning to work; thus suggesting they did not have intentions to use the program. The investigators noted that these findings were consistent with past studies.

No specific studies, however, were located examining a relationship between perception of health and use of VR services, particularly for Latinos and PLWHA. While conventional wisdom assumes that those with a more positive perception of their health would be more inclined to consider obtaining or maintaining work and thus take advantage of services such as VR to achieve these goals, further research is needed in order to examine this association. Particularly given some of the cultural factors among Latino men that may interplay with perceptions of health status, conditions, and disabilities (e.g., fatalism, external locus of control; Moreno, 2007; Weitzel, et al., 1994; Urizar & Sears, 2006), it is especially important to glean more empirical evidence as to the health perceptions among Latino men with HIV/AIDS and investigate how these may affect VR service use.

Need for Vocational Assistance

In Andersen's model, perceptions of whether individuals judge their issues to be of sufficient importance and magnitude to seek professional help are included in the need domain as factors related to service utilization (Andersen, 1995). With regard to VR services, the individual's perceived need for vocational services falls into this domain (Kolakowsky-Hayner, 2007). Vocational services offered by VR agencies include job seeking assistance and planning in order to maintain employment (Bolton, Bellini, & Brookings, 2000). Job-seeking assistance includes assistance with skills needed to competitively pursue and obtain employment such as how and where to look for a job, how to complete an employment application/prepare a resume, and job market familiarity (Hergenrather et al., 2008). Planning in terms of maintaining employment for PLWHA may include monitoring and negotiating changes health status and functionality and addressing a potential need for work accommodations (Conyers & Boomer, 2005). How confident one is with job seeking skills to secure work as well as with ability to maintain employment are thought to be good indicators of perceived need to utilize vocational services such as VR.

Confidence in Job Seeking Skills

Research regarding job seeking skills and strategies is addressed on some level in the literature regarding Latinos (e.g., Green, Tigges, & Diaz, 1999; Kossoudji & Cobb-Clark, 1996; Livingston, 2006), people with disabilities (Mannock, Levesque, & Prochaska, 2002; Hergenrather et al., 2008; Hergenrather & Rhodes, 2008), and PLWHA (Hergenrather et al., 2004; Hergenrather & Rhodes 2008; Sowell, et al., 2001). Regarding Latinos, Livingston found high odds for using a family or a friend as a resource for job seeking assistance as opposed to a non-social network job search (e.g., employment agency) in her study of Mexican immigrants. In

addition, Elliott (2001), using data from the *Multi-City Study of Urban Inequality* (MCUSI; a large sample of 2781 individuals from Atlanta, Boston, Detroit, and Los Angeles of which 840 were Latino) found that Latinos, particularly recent immigrants, used the assistance of family members or friends to obtain work significantly more than non-Latino Whites or Blacks (81.1% as compared to 51.1% and 55.3% respectively). In a similar study, Smith (2001) also using the MCSUI, found similar results. Furthermore, Green et al., using the MCSUI, found that only 14% of the Latinos in the study utilized state agencies for job seeking strategies, which compared to 18% of Whites and 26% of Blacks. In addition, Stoll and Raphael (2000) found that Latinos were less likely than Blacks or Whites to use intermediary job seeking assistance methods (e.g., state or private employment agencies).

While much of this information suggests that Latinos tend to use personal contacts more often as opposed to professionals for job seeking activities, no studies were located that measured Latinos' perception or their ability or confidence in their job seeking skills or ability to obtain work. There are some studies, however, that measure this variable on some level in terms of PLWHA. For example, Hergenrather et al. (2004), in their study on employment seeking behavior of PLWHA found that over half of their sample (n = 168) reported lack of job seeking skills as an impediment to work. Similar results were found by Sowell et al. (2001), when the investigators examined PLWHA who had recently been released from prison. In addition, Hergenrather and Rhodes (2008) found similar results in a later study in which they surveyed public rehabilitation counselors. In this investigation, lack of job-seeking skills for PLWHA was identified as an impediment by over 70% of their participants.

Regarding individuals with disabilities in general, some studies measure this construct on some level. Hall (2007), for example, using a sample of African Americans with disabilities and

an adaptation of Andersen's model, measured the extent to which individuals perceived their disabilities limiting their ability to obtain employment. The investigator found that almost half of the sample of 151 indicated their ability to obtain employment was limited somewhat or a lot. In addition, Hergenrather, et al. (2008) surveyed 577 individuals with disabilities and found very high mean scores regarding confidence in job seeking skills for the sample. Interestingly, the sample consisted of people who had applied to and were being oriented to VR services. The authors note, however, that several studies have found that consumers tend to over-estimate their job seeking skills and abilities. Further, Hergenrather and Rhodes (2008) note that the issue of limited job seeking skills of persons with disabilities has been reported as an impediment for more than four decades by several rehabilitation researchers.

While conventional wisdom would lead to the belief that greater confidence in one's job seeking skills would likely reduce the use of VR services, as noted by Hergenrather et al. (2008), there is some contradictory evidence of this assumption. Given the limited research on this variable with Latinos and the limited and sometimes contradictory research with PLWHA and individuals with disabilities, this variable warrants further investigation for Latino men with HIV/AIDS.

Confidence in Maintaining a Job

There are very few studies within the rehabilitation and related literature regarding individuals' ability to maintain work, particularly regarding confidence in their ability to do so. No studies were located regarding perceived ability or confidence in maintaining employment by Latinos specifically; however some literature exists investigating this issue for other groups with disabilities and PLWHA on some level. With regard to individuals with disabilities in general, Hall (2007) measured the extent to which African Americans with disabilities felt their disability

limited their ability to maintain employment. The investigator found that about a third of the sample of 151 respondents indicated that their ability to maintain employment was limited somewhat or a lot by their disability. As noted by Hergenrather et al. (2008), managing disability issues during interviews and while employed involves contemplating self-disclosure of disability and management of information about disability. In their study, participants' reported mean level was very high in terms of confidence when requesting information about accommodations, which could be integral in the maintenance of work.

In terms of PLWHA, in a qualitative study examining the work needs and experiences of 29 PLWHA utilizing focus groups (one of which was solely comprised of Latino participants), Timmons and Fesko (2004) found that maintaining work without accommodation was a concern of employed participants. The most common accommodation reported was the need for time off for medical appointments. This finding is consistent with Conyers (2004b) qualitative study involving 46 PLWHA (both employed and unemployed), which also used focus groups. Participants in the latter study expressed a primary concern in terms of ability to obtain or maintain employment in light of the need to attend regular medical appointments. In Timmons and Fesko's study, investigators also found that participants tended to use personal supports before professional resources when they had employment-related issues, and very few reported using their state VR agency for help with employment. Furthermore, participants in general reported that they believed ASOs were minimally responsive to their employment concerns; therefore, they tended not to turn to these agencies when addressing work-related challenges.

Rumrill, Steffen, and Summer (1996) posit that job accommodation is primary for job maintenance for people with disabilities. The issue of addressing accommodation has garnered some attention in the rehabilitation and HIV/AIDS literature, much of which indicates that

accommodations are underutilized by people with disabilities including HIV/AIDS (e.g., Baldrige & Veiga, 2001; Conyers & Boomer, 2005). Conyers and Boomer, in their study on disclosure of HIV/AIDS to employers by PLWHA who use accommodations, found that half of their sample of 84 indicated that they would not be able to or were unsure if they could work without accommodations; thus suggesting that accommodations indeed may play a key role in job maintenance, a finding which the authors noted was consistent with past studies.

Roessler and Rumrill (1994) theorized that because the impact of a chronic disease can often reduce feelings of self-efficacy, some individuals may not believe they have skills needed in order to reduce on-the-job-barriers or address accommodations, and thus, in many cases, be able to maintain work. Conventional wisdom leads to the assumption that individuals who have more confidence in their in their ability to maintain employment would be less likely to believe they need vocational services such as VR. However, given the limited research and potential impact of perception of or confidence in ability to maintain employment on HIV-positive Latino men's use of VR services, it is another important variable to consider when examining the population.

To summarize thus far, this chapter reviewed variables considered integral to Latino men with HIV/AIDS and their use of VR services. Variables described represent predisposing, enabling, and need characteristics as applied to Andersen's *Behavioral Model of Service Utilization* (Andersen 1968, 1995; Gelberg et al., 2000). Given that state-federal VR services may be a viable resource for the vocational development of many Latino men with HIV/AIDS, it is important to expand our understanding of factors that foster or impede their use of these services.

Current Study

The impetus behind this study was the dearth of research that examines VR service use by Latino men with HIV/AIDS. Clearer understanding of the variables that are related to VR service use for this population can be essential for the assessment of their service needs, for the identification of barriers to service utilization, for provision appropriate outreach, and for the development of culturally appropriate services. While there is some literature that helps to increase general understanding of Latino men who participate in VR services, the literature suggests a need for further understanding of their use patterns as well as a need to understand Latino men who may qualify for services but do not access or use them. This understanding is particularly important for the population of Latino men with HIV/AIDS, who represent an underrepresented group in rehabilitation service provision.

Research Questions

The study sought to investigate variables associated with and predictive of the use of VR among Latino men with HIV/AIDS. It was guided by the following research questions:

1. To what extent are descriptive characteristics of the sample of Latino men with HIV/AIDS related to predisposing, enabling, need, and outcome variables?
2. Which predisposing, enabling, and need variables differentiate Latino men with HIV/AIDS who utilize VR services from those who do not?
3. Which predisposing, enabling, and need variables are predictive of the use of VR services among Latino men with HIV/AIDS?
4. What are ethnic subgroup differences among Latino men with HIV/AIDS in terms of predisposing, enabling, and need variables?

Study Hypotheses

Several hypotheses were developed for variables based on service use research and theory concerning Latino men with HIV/AIDS. Variables in the predisposing domain include sexual orientation, ethnicity, and racial identification. In terms of sexual orientation, it is hypothesized that Latino men with HIV/AIDS who identify as gay or bisexual will be less likely to have used VR services than those who identify as heterosexual. Regarding ethnic subgroup membership, it is hypothesized that Cuban and Puerto Rican men will be more likely to have utilized VR services than Mexican men. For racial identification, it is hypothesized that HIV-positive Latino men who identify as White will be more likely to have used VR services than those who identify as Black.

Variables in the enabling domain include poverty/income, knowledge of services, and receipt of public benefits. Regarding poverty/income, it is hypothesized that Latino men with HIV/AIDS who are in poverty are less likely to have utilized service than those above the poverty range. With regard to knowledge of VR services, as one would expect, it is hypothesized that individuals who do not report knowledge of the services will be less likely to have utilized them than individuals who do report knowledge. This variable in the study, in particular, serves as an appropriate and important exploratory measure, given the limited research on Latinos, PLWHA, and other cultural groups and their knowledge of VR services. Concerning receipt of public benefits, it is hypothesized that those who have received either SSI or SSDI will be less likely to have utilized VR services.

Variables in the need domain include general health perception, confidence in job seeking skills, and confidence in ability to maintain employment. For general health perception, it is hypothesized that the better an individual perceives his health the more likely he will be to

have used VR Services. Regarding both confidence in job seeking skills and ability to maintain work, it is hypothesized that individuals who are less confident with their abilities in these areas will be more likely to have used VR services.

CHAPTER III: METHODOLOGY

Participants

The sample for this study came from the *National Working Positive Coalition – Vocational Training and Employment Survey (NWPC-VTES) Study*, a national survey project assessing vocational development and employment needs of people living with HIV/AIDS (PLWHA). Participants (n = 101) composed a representative sample of Latino men from New York State who were recruited via outreach from 12 AIDS service organizations (ASOs) and networks (seven from upstate and five from downstate) funded by the AIDS Institute - New York Department of Health. A sample from the New York State AIDS Institute data set was chosen over one from the larger national data set in order to control for variation in procedures that may have external influence on access and use of VR services, including state-specific vocational rehabilitation (VR) policies and funding levels.

The New York State data set was stratified by gender and race/ethnicity to match the demographic characteristics of PLWHA in New York State per the New York Department of Health (2008). In addition, to ensure representation from both employed and unemployed individuals in this study's sample, attempts were made to recruit approximately 30% employed and 70% unemployed participants, as these were rough estimates of the overall employment statuses of PLWHA noted in the research literature (Dray-Spira et al., 2005; Fleishman, 1998; Maguire et al., 2008; Montoya, Trevino, & Kreitz, 1999). Furthermore, attempts were made to recruit individuals who spoke and completed the survey in Spanish as well as English in order to have representation from both languages. All respondents in the sample were required to be Latino males, at least 18 years of age, and report a diagnosis of either HIV-positive or AIDS.

Procedure

Recruitment and Administration

This study was approved by the Penn State University Internal Review Board. Survey research methods were used to collect data on the vocational development and employment needs of the sample of HIV-positive Latino men in New York State. Data collection took place at the 12 agencies who agreed to collaborate with the New York State AIDS Institute and Penn State University. The researcher trained agency staff on recruitment, informed consent, confidentiality, instrument administration, and debriefing procedures.

Staff recruited participants individually and in groups to take the NWPC-VTES (instrument described below). Staff members who administered surveys in group format and/or provided one-to-one assistance to participants were required to successfully complete an online training module developed by Penn State University's Office for Research Protections. Staff informed participants about the purpose of the study and emphasized the need for thoughtful and honest responses so that the data could be as accurate as possible. All participants were informed their participation was completely voluntary, had no bearing on the services they receive, and that they could choose to drop out at any time without consequence. Participants were informed that their choice to complete the survey indicated their consent to participate in the study. All participants were provided with an employment resource list for taking the survey, and most were paid a \$10.00 stipend. Those who did not receive a stipend had completed the survey prior to the stipend procedure being put into place.

Instrumentation

National Working Positive Coalition-Vocational Training and Employment Survey

The NWPC-VTES (Conyers, 2008) is specifically designed to assess the vocational-related

needs of PLWHA. The survey instrument was designed for the larger national study and is based upon a revision of a previous survey instrument, the *National Working Positive Coalition Employment Needs Survey* (NWPC-ENS), which was used to survey 728 PLWHA in 2004 (see Conyers & Datti, 2008a for a description). Procedures for NWPC-VTES item development included extensive review of the research literature, focus group data, expert panel review, and pilot testing, with several revisions based on each (Conyers, 2008).

The survey takes approximately 15-30 minutes to complete, is available in English and Spanish, and comes in both paper-and-pencil and Internet formats (Conyers, 2008). The instrument contains three major sections (relating to demographic information, employment issues, and health status) and has two versions (one for those who are working and one for those who are not), each of which are identical with the exception of employment status-specific questions (Conyers). Each of the items used in the current study were identical on both the working and not working versions of the survey and are provided in Appendices A and B. To create the Spanish versions, English versions were translated into Spanish and then back translated by a professional translator for linguistic accuracy (Conyers). Additionally, a committee of individuals from different linguistic backgrounds and cultures made recommendations as to the questioning. The Internet version of the survey was prepared with skip-pattern logic to forward questioning line appropriately depending on responses to certain questions.

Medical Outcomes Study – Human Immunodeficiency Virus Health Survey-General Health Perception Scale

The *Medical Outcomes Study – Human Immunodeficiency Virus (MOS-HIV) Health Survey* is a comprehensive 35-item measure of health-related quality of life, and is used

extensively the field of HIV/AIDS (Wu, 1999). A number of the MOS-HIV subscales are embedded in the NWPC-VTES (both English and Spanish versions in the corresponding survey versions), including the general health perception (GHP) subscale, which was used in the current study. The GHP subscale assesses an individual's general health, resistance to illness, and health outlook (Wu, 1999). The questions and statements, "In general, would you say your health is," "I am somewhat ill," "I am as healthy as anybody I know," "My health is excellent," and "I have been feeling bad lately" make up the GHP subscale and are scored on five-point Likert-type scales ranging from poor to excellent or definitely true to definitely false (Wu, 1999, p. 21).

Data from numerous studies support the internal consistency (reliability) of the GHP subscale of the MOS-HIV, and multi-trait analyses support its construct validity (Wu, 1999). In initial evaluations, internal consistency for the subscale ranged from .79 to .87 (Wu, 1999), and subsequent studies demonstrated high internal consistency for the subscale as well (Holmes & Shae, 1999). The Spanish version of the MOS-HIV has also shown good internal consistency for this scale. For example, in a validation study of quality of life questionnaires, Badia, Podzamczar, Casado, Lopez-Lavid, and Garcia (1999) found Cronbach's alphas between 0.78 and 0.89 on all MOS-HOV subscales.

Variable Definitions and Measurement

Items for the NWPC-VTES assessed outcome and predictor variables in this study. The outcome variable is use of VR or not. Predictor variables include predisposing (sexual orientation, ethnicity, racial identification) enabling (poverty/income, knowledge of VR, receipt of public benefits), and need (general health perception, confidence in job seeking skills, confidence with maintaining a job) variables based on Andersen's model. Variable descriptions are provided below. Please see Appendix A for the actual survey items.

Use of VR Services

The outcome variable in this study was dichotomous, whether participants had used VR or not. It was measured by self report via an item that asks participants which of eight services, including state VR services, they have received either in the past, currently, or never since being diagnosed with HIV/AIDS. This item was made dichotomous by coding responses into one of the following categories: never received VR (0) and currently receiving/received VR in past (1).

Sexual Orientation

Sexual orientation was defined as whether a participant identifies as either heterosexual, gay, or bisexual. This categorical variable was measured by self-report via an item that allowed participants to choose from a list of sexual orientation options. Responses were coded as heterosexual (1), gay (2), and bisexual (3).

Ethnicity

Ethnic subgroup membership for this study encompassed whether an individual identifies as Mexican/Mexican American/Chicano (herein referred to as Mexican), Puerto Rican, Cuban/Cuban American (herein referred to as Cuban), or Other Latino/Hispanic/Spanish. This categorical variable was measured by self-report on an item that allowed participants to select from a list of Latino ethnicity options. Respondents who did not indicate a particular Latino ethnicity were grouped into a category labeled Unknown. Responses were coded as Unknown (0), Puerto Rican (2), Mexican (3), Cuban (4), and Other (5).

Racial Identification

Racial identification was defined as whether Latino male respondents identify as White, Black, or Other. This categorical variable was measured by self-report on an item that allowed participants to choose from a list of racial identifications. Respondents who did not indicate a

particular race were grouped into a category labeled Unknown. Responses were coded as Unknown (0), Black (1), White (6), and other (11).

Poverty/Income

Poverty in this study was defined by U.S. poverty standards and was measured via participants' self-report of income via an item that assessed yearly household (shared) income level and an item that assessed the number of people in the participant's (shared income) household. Depending on their reported (shared) income, respondents were categorized as in poverty or not, and those who did not indicate their income were grouped into a category labeled Unknown. Responses were coded as Unknown (0), in poverty (1), not in poverty (2).

Knowledge of Services

Knowledge of VR services was a dichotomous variable defined as whether an individual either knows about state VR services (1) or not (0). This variable was derived from a self report item that asked participants to indicate which of several services and supports they know about, including state VR services.

Receipt of Public Benefits

The receipt of public benefits variable encompassed whether an individual has received either Supplemental Security Income (SSI) or Social Security Disability Income (SSDI) or not. It was measured by self report on an item that asked participants which of several benefits, including SSI and SSDI, they have received either currently, in the past, or never. This item was made dichotomous by coding responses into the following categories: never received SSI or SSDI (0) and currently receiving/received SSI or SSDI in past (1).

General Health Perception

General health perception (GHP) was a continuous variable that was defined per the

MOS-HIV and scored using the MOS-HIV standards provided by the instrument's author. Each of the five self-reported items was scored on five-point Likert scale yielding a composite score range from 5 – 25, with low scores indicating poor view of personal health and high scores indicate excellent view of personal health (Wu, 1999). Three of the items were re-coded to reflect reverse scoring, and scores were converted to create a scale of 0-100 in order to be consistent with the other MOS-HIV subscales (Wu, 1999). Half of the scale items needed to have been answered in order for the scale to be validly scored; if less than half were missing, the participant's average score across the completed set of scale items was imputed per the authors' recommendations (Wu, 1996, 1999).

Confidence in Job Seeking Skills

Confidence in Job Seeking Skills was operationalized as respondents' reported confidence in their job seeking skills. It was a continuous variable measured by self-report on an item that asked respondents to rate their confidence with this ability, ranging from no confidence to extremely confident on a Likert-type scale ranging from 1 – 7.

Confidence in Ability to Maintain a Job

Confidence in Ability to Maintain a Job was operationalized as respondents' confidence in their ability to hold on to a job once they had it. It was a continuous variable measured by self-report on an item that requested respondents' to rate their confidence with this ability, ranging from no confidence to extremely confident on a Likert-type scale ranging from 1 – 7.

Statistical Analysis

Descriptive statistics, bivariate analyses, and binary logistic regression analysis were used for this study. All appropriate inferential statistics were considered significant at the $p \leq .05$ level, as this is the standard in the social sciences (Garson, 2008a). The *Statistical Package for*

the Social Sciences base 17.0 (SPSS, 2009) was used to calculate the analyses in this study.

Descriptive Statistics

Descriptive statistics (i.e., means, standard deviations, frequencies, and percents) were used to describe sample characteristics in terms of the outcome and predictor variables. In addition, other descriptive items, including age, HIV/AIDS status, employment status, and years of education completed were utilized to provide further information about the Latino male sample. Please see Appendix B for the actual other descriptive items.

Bivariate Analyses

Chi Square analyses were performed to compare VR users and non-VR users on categorical predictor variables to assess if there were any significant differences between the two types of participants. In addition, Chi Square analyses were used to determine differences between men in different ethnic subgroups with regard to categorical predictor variables. The Chi Square test is a commonly used non-parametric statistic that is appropriate for examining relationships between categorical variables (Urdan, 2005). In some instances, variables had inadequate cell sizes (i.e., less than five; Leong & Austin, 2006); therefore, logical combinations of similar cells were created so as to assure the expected frequency assumption. There were very few Cuban and Mexican respondents; therefore, these respondents were grouped into the Other Latino category along with those who did not indicate a specific ethnicity; thus creating a dichotomous ethnicity variable (Puerto Rican or Other Latino) and allowing for adequate cell sizes. In addition, individuals who did not indicate a specific race were grouped into the Other racial identification category for the same purpose.

Independent t-tests were conducted to compare VR users and non-VR users and the men in the different ethnic subgroups on the continuous predictor variables. The independent t-test is

a commonly used statistic that is appropriate for comparing means among groups for continuous variables (Urdan, 2005).

Logistic Regression

This study used binary logistic regression analysis to identify and analyze variables that predict the use of VR services in the sample. Binary logistic regression procedures estimate the odds of the outcome variable occurring based on predictor variables (Garson, 2008b). The predictor variables described above were chosen based on existing scientific literature. These variables include both categorical and interval/ratio (continuous) items. Binary logistic regression was appropriate for this analysis as it allows for categorical and continuous independent variables and for dichotomous outcome variables (Glass & Hopkins, 1996; Leong & Austin, 2006). For this type analysis, Garson (2008b) suggests that there be no more than one predictor variable for each ten cases in the sample. Further, Peduzzi, Concato, Kemper, Holford, and Feinstein (1996) recommend a minimum of ten events (or participants) per independent variable as well because inaccurate estimation of the actual regression coefficient is more likely with low (i.e., less than ten) events per variable. Consistent with established statistical guidelines, a minimum of 90 participants were recruited for this sample to ensure that minimum requirements were met.

A hierarchical approach to the logistic regression analysis was taken to determine changes in model significance when variables were added in blocks. The logistic regression analysis was performed in three blocks, with the predisposing variables entered first, followed by the enabling variables, and then need variables. Although according to Andersen (1995) need factors are the most important component for service utilization, there is mixed research in terms of their being the most predictive of service use (e.g., Calsyn & Winter, 2000; Herrera, Lee,

Palos, & Torres-Vigil, 2008; Kilbourne et al., 2002); therefore, there was no particular rationale for entering any given predictors in a particular order other than order consistency.

Imputation techniques were utilized to address missing data for the need variables, each of which are continuous in nature. While substituting the overall mean score of the remaining participants is the simplest method of imputation and creates a rough equivalent of a complete case analysis, it has the disadvantage of spiking the distribution and rendering it distorted (Groves et al., 2004). Therefore, mean value imputation by subgroup (racial identification) was used to address the distortion and in order to provide more accurate imputed values (Groves et al.). The mean values for each variable were computed for the Black, White, and Other respondents, and subsequently replaced the missing values for each case based on their racial category.

CHAPTER IV: RESULTS

Goals of this study included the identification of variables related to and predictive of the use of VR services by Latino men with HIV/AIDS, including which variables differentiate Latino men with HIV/AIDS who utilize vocational rehabilitation (VR) services from those who do not. To illustrate these goals and related study aims, results are presented in four sections per each research question. First, characteristics of the sample are presented with descriptive statistics to address research question one. To address research question two, bivariate analyses are then presented describing whether significant differences exist between VR users and non-VR users on each predictor variable per the domains of Andersen's model. Next, to address research question three, a binary logistic regression analysis is presented to identify the predictive contribution of each variable. Finally, to address research question four, bivariate analyses are presented describing whether significant differences exist between the ethnic subgroups of Latino men in this study with regard to predisposing, enabling, and need variables.

Characteristics of the Sample

All respondents ($n = 101$) in the sample were Latino, male, at least 18 years of age, and reported a diagnosis of either being HIV-positive or having AIDS. The mean age of respondents was 46 years (ages ranged from 20 to 67 years old). Approximately two-thirds (63%) of the sample reported being HIV-positive and the remainder reported having AIDS. Approximately one-third (33%) had less than a high school diploma, while only 14% had an earned college degree. About 80% of participants were unemployed, and 20% were working.

The main source of the data came from pencil-and-paper surveys administered in group format; however, approximately 9% of participants took the survey via the Internet. Twenty-two percent of the participants took the survey in Spanish. All but 12% of the participants were paid a

stipend to complete the survey, as those who did not receive the stipend had completed the survey prior to the stipend procedure being put into place.

Outcome Variable

Research question one sought to determine the extent to which Latino men with HIV/AIDS used VR services. Descriptive findings for the outcome variable, use of VR services or not, are presented in Table 1. Results indicated that among the Latino men with HIV/AIDS who responded to the NWPC-VTES, approximately 30% had used VR services as compared to 70% who had not.

Table 1

Descriptive Statistics for Outcome Variables

Variable	Frequency	Percentage
Use of VR Services		
Yes	30	29.7
No	71	70.3

Note. VR = Vocational Rehabilitation.

Predictor Variables

Predisposing Variables

Research question one also sought to determine the extent to which the descriptive characteristics of the sample related to predisposing variables. Descriptive findings for predisposing variables (sexual orientation, ethnicity, and racial identification) are presented in Table 2. Of the men in the sample, almost half (48%) identified as heterosexual, while 35% identified as gay, and 14% identified as bisexual. Four percent of the men did not identify a sexual orientation. In terms of ethnicity, just over half (50.5%) of the sample identified as Puerto

Rican, while 3% identified as Mexican, 4% as Cuban, and 42.5% as Other Latino. Some respondents who chose the Other Latino category provided specific ethnicities which included Honduran, Spaniard, Dominican, and El Salvadoran. With respect to racial identification, there were similar numbers of those who identified as Black (44%) and White (42%), while 15% identified as Other in terms of race. Some respondents who chose the Other category indicated they identified as multiracial, while others provided an ethnicity as a response.

Table 2

Descriptive Statistics for Predisposing Variables

Variable	Frequency	Percentage
Sexual Orientation		
Heterosexual	48	47.5
Gay	35	35.0
Bisexual	14	14.0
Ethnicity		
Puerto Rican	51	50.5
Mexican	3	3.0
Cuban	4	4.0
Other Latino	43	42.5
Racial Identification		
Black	44	43.6
White	42	41.6
Other	15	14.8

Enabling Variables

Research question one also sought to determine the extent to which descriptive characteristics of the sample related to enabling variables. Descriptive findings for enabling variables (poverty/income, knowledge of VR, and receipt of public benefits) are presented in Table 3. Of the men in the sample, almost half (44%) fell into the poverty range. Eleven percent did not report their income. Almost two-thirds (63%) reported no knowledge of VR services, and

the majority of participants (56%) had received public benefits (i.e., Supplemental Security Income [SSI] or Social Security Disability Income [SSDI]).

Table 3

Descriptive Statistics for Enabling Variables

Variable	Frequency	Percentage
Poverty/Income		
Yes	44	43.6
No	46	45.5
Knowledge of VR		
Yes	37	36.6
No	64	63.4
Receipt of Public Benefits		
Yes	57	56.4
No	44	43.6

Note. VR = Vocational Rehabilitation.

Need Variables

Finally, research question one sought to determine the extent to which descriptive characteristics of the sample related to need variables. Descriptive findings for need variables (general health perception [GHP], confidence in job seeking skills, and confidence in ability to maintain a job) are presented on Table 4. For GHP, the mean score fell at 50.27, very near the mean of 50 on the 0-100 scale. The overall mean score for confidence in job seeking skills was near the mid-range of the seven point Likert-type scale ($M = 4.34$) with 1 indicating no confidence and 7 indicating extremely confident. The overall mean score for confidence in

ability to maintain a job was near the mid-high range of the same seven point Likert-type scale ($M = 4.94$). Internal consistency reliability (Cronbach's alpha) was computed to determine correlations of items on the GHP scale. In the current study, the internal consistency for this scale was .81, which constitutes good internal consistency (Heppner, Kivlighan, & Wampold, 1999), and is consistent with past studies using this scale of the MOS-HIV (Wu, 1999).

Table 4

Descriptive Statistics for Need Variables

Variable	Mean	Standard Deviation	Cronbach's Alpha
General Health Perception (0-100)	50.27	21.38	.81
Confidence in Job Seeking Skills (1-7)	4.34	2.00	
Confidence in Maintaining a Job (1-7)	4.94	1.95	

Bivariate Analyses

Research question number two sought to determine which predisposing, enabling, and need variables differentiate Latino men with HIV/AIDS who utilize VR services from those who do not. To examine this question, a series of bivariate analyses were performed to investigate the relationships between each predictor variable and the outcome variable. Chi Square analyses were run to compare VR users and non-VR users on predisposing and enabling variables, each of which was categorical. The assumptions for Chi Square analyses were met, including independence of observations (each respondent provided only one set of scores) and adequate cell sizes (Leong & Austin, 2006). Independent t-tests were conducted to compare VR users and non-VR users on the need variables, each of which was continuous in nature. Assumptions for independent t-tests were met, including independent observations, normality of data, and

homogeneity of variance (Leong & Austin, 2006). To investigate normality, skewness values were examined and found to indicate normality of data for each continuous variable. To investigate homogeneity of variance, Levene's tests were run, and each independent variable was found to have homogeneity of variance across the levels of the variables.

Tables 5 and 6, respectively, show results of the Chi Square analyses of predisposing and enabling predictor variables and the outcome variable, use of VR or not. Table 7 shows results of independent t-tests, and includes each of the need variables. None of the predisposing or need variables were statistically significant in terms of differences between VR users and non-VR users. One enabling variable (knowledge of VR), however, indicated a statistically significant difference ($X^2 = 46.02, p < .001$). In this case, those with knowledge of VR used the services to significantly greater extents.

Table 5

Bivariate Analyses of Predisposing Variables and Use of VR

Variable	Use of VR (%)		X^2	<i>df</i>	<i>p</i>
	Yes	No			
Sexual Orientation			.73	2	.70
Heterosexual	53.3	47.8			
Gay	30.0	38.8			
Bisexual	16.7	13.4			
Ethnicity			2.81	1	.09
Puerto Rican	63.3	45.1			
Other Latino	36.7	54.9			
Racial Identification			1.56	2	.46
Black	46.7	42.3			
White	33.3	45.1			
Other	20.0	12.6			

Note. VR = Vocational Rehabilitation.

Table 6

Bivariate Analyses of Enabling Variables and Use of VR

Variable	Use of VR (%)		X^2	<i>df</i>	<i>p</i>
	Yes	No			
Poverty/Income			2.26	1	.13
Yes	60.7	43.5			
No	39.3	56.5			
Knowledge of VR			46.02	1	<.001
Yes	86.7	15.5			
No	13.3	84.5			
Receipt of Public Benefits			3.19	1	.07
Yes	70.0	50.7			
No	30.0	49.3			

Note. VR = Vocational Rehabilitation

Table 7

Bivariate Analyses of Need Variables and Use of VR

Variable	Use of VR				<i>t</i>	<i>df</i>	<i>p</i>
	Yes		No				
	M	SD	M	SD			
General Health Perception (0-100)	56.03	20.25	47.83	21.52	-1.78	99	.08
Confidence in Job Seeking Skills (1-7)	4.59	1.79	4.23	2.09	-.82	99	.42
Confidence in Maintaining Job (1-7)	5.45	1.54	4.72	2.07	-1.72	99	.09

Note. VR = Vocational Rehabilitation

Logistic Regression Analysis

The third research question sought to determine which predisposing, enabling, and need variables were predictive of the use of VR services among the Latino men with HIV/AIDS. To address this question, a logistic regression analysis was conducted to identify and analyze variables that predict the use of VR services. The logistic regression assumptions of independent observations and lack of multicollinearity (Garson, 2008b) were addressed prior to conducting the analysis. The assumption of independent observations was met as each participant provided only one set of responses. Multicollinearity was addressed via examining the relationships among and between predictor variables, using Pearson's coefficients to compare continuous predictors, Cramer's statistic to compare categorical variables (Phi coefficients for dichotomous), and Point Biserial coefficients to compare combinations of continuous and categorical variables. According to Garson (2008c), a rule of thumb for these type analyses is that correlations are considered high when over .90, thus causing the standard errors to become large and clouding results by making it difficult to determine the importance of variables. Consistent with this rule, none of the predictor variables were highly correlated; therefore the assumption for lack of multicollinearity has been met as well. In light of this finding, it was not necessary to address interaction effects by adding any combinations of variables; therefore, the logistic regression model contains only main factors.

Table 8 shows correlations among each of the predisposing, enabling, and need variables. Table 9 shows correlations between predisposing and enabling variables. Table 10 shows correlations between predisposing and need variables. Finally, Table 11 shows correlations between enabling and need variables.

Table 8

Correlations among Predisposing Variables, Enabling Variables, and Need Variables

Variable	1.	2.
Predisposing		
1. Sexual Orientation		
2. Ethnicity	.22	
3. Racial Identification	.18	.25*
Enabling		
1. Poverty/Income		
2. Knowledge of VR	.03	
3. Receipt of Public Benefits	.18	.21*
Need		
1. General Health Perception		
2. Confidence in Job Seeking Skills	.12	
3. Confidence in Maintaining Job	.19	.63**

Note. VR = Vocational Rehabilitation

* $p < .05$, ** $p < .01$

Table 9

Correlations between Predisposing and Enabling Variables

Predisposing Variables	Enabling Variables		
	Poverty/Income	Knowledge of VR	Receipt of Public Benefits
Sexual Orientation	.10	.19	.08
Ethnicity	.02	.01	.17
Racial Identification	.10	.10	.16

Note. VR = Vocational Rehabilitation

Table 10

Correlations between Predisposing and Need Variables

Predisposing Variables	Need Variables		
	General Health Perception	Confidence in Job Seeking Skills	Confidence in Maintaining a Job
Sexual Orientation	.10	-.07	-.10
Ethnicity	.09	-.08	-.02
Racial Identification	-.03	.09	-.04

Table 11

Correlations between Enabling and Need Variables

Enabling Variables	Need Variables		
	General Health Perception	Confidence in Job Seeking Skills	Confidence in Maintaining a Job
Poverty/Income	.05	-.15	-.19
Knowledge of VR	.11	.07	.03
Receipt of Public Benefits	-.10	.23*	-.25*

Note. VR = Vocational Rehabilitation

* $p < .05$

The binary logistic regression model was assessed using the Hosmer and Lemeshow Chi Square goodness of fit test. This method is the recommended fit test for binary logistic regression, is more robust than the normal Chi Square test, and is used when continuous predictor variables exist and/or the sample size is small (Garson, 2008b). Non-significant findings indicate there is adequate fit of the data to the model in that it indicates there is no difference between observed values and those predicted by the model; thus indicating that the variance it explains is statistically significant. In the current study, the Hosmer-Lemeshow goodness of fit test results were non-significant in each of the first two blocks as well as the third and final model ($X^2 = 4.91$, $df = 8$, $p = .77$), indicating a good fit to the data.

Results of the logistic regression analysis are presented in Table 12. To increase likelihood of numerical stability in the model and to reduce overfitting, the number of variables was minimized (Hosmer & Lemeshow, 1989) to include only those indicating a substantial association in the preliminary bivariate analyses (i.e., $p < .15$; Cohen, Magai, Yaffee, & Walcott-Brown, 2006; de la Cruz, Rozier, & Slade, 2004; Li, et al., 2009). In block one, ethnicity was

entered into the model and was found to be a statistically significant predisposing predictor ($B = -1.01, p = .04$). When examining the $Exp(B)$ value for this variable in the final model ($Exp(B) = .06$), it indicates that Other Latino men are only about 6% as likely to have used VR services than Puerto Rican men. In other words, Puerto Rican men are about 17 times more likely to have used VR services. In block two, with the addition of all the three enabling variables, only poverty/income and knowledge of VR were statistically significant predictors ($B = -1.66, p = .03$; $B = 4.31, p = <.001$), while ethnicity remained statistically significant. Examination of the $Exp(B)$ value for poverty/income in the final model ($Exp(B) = .15$) indicates that those not in poverty are only about 15% as likely to have used VR services than those who in poverty. In other words, Latino men in poverty were about seven times more likely to have used VR services than those who are not in poverty. Examination of the $Exp(B)$ value for knowledge of VR in the final model ($Exp(B) = 191.76$) indicates that those who have knowledge of VR were almost two hundred times more likely to have used VR services than those who indicated no knowledge of the services. Lastly, in block three and the final model, with the relevant need variables added, confidence in ability to maintain a job was statistically significant ($B = .46, p = .04, Exp(B) = 1.59$), while ethnicity, poverty/income, and knowledge of VR remained significant as well. The $Exp(B)$ value for confidence in ability to maintain a job indicates that the odds of receiving VR increase over one and a half times per increase of one on the score of this variable.

Table 12

Logistic Regression Analysis - Use of VR Services

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	<i>Exp(B)</i>	<i>95%CI</i>
Block 1							
Ethnicity	-1.01	.48	4.42	1	.04	.37	.14-.93
Block 2							
Ethnicity	-1.87	.77	5.88	1	.02	.15	.03-.70
Poverty/Income	-1.66	.77	4.68	1	.03	.19	.04-.85
Knowledge of VR	4.31	.88	23.87	1	<.001	74.54	13.22-420.36
Receipt of Public Benefits	.16	.74	4.28	1	.83	1.17	.28-4.96
Block 3							
Ethnicity	-2.91	1.09	7.07	1	<.01	.06	.01-.47
Poverty/Income	-1.88	.97	3.81	1	.05	.15	.02-1.01
Knowledge of VR	5.26	1.26	17.45	1	<.001	191.76	16.28-2258.60
Receipt of Public Benefits	.85	.84	1.01	1	.32	2.33	.45-12.11
Confidence in Maintain Job	.46	.23	4.18	1	.04	1.59	1.02-2.48
GHP	.04	.02	3.59	1	.06	1.04	1.00-1.08

Note. GHP = General Health Perception; VR = Vocational Rehabilitation.

Ethnic Subgroup Differences

Research question number four sought to investigate ethnic subgroup differences among Latino men with HIV/AIDS in terms of predisposing, enabling, and need variables. While it was originally planned to investigate differences among the three largest subgroups of Latino men in the U.S. (Puerto Rican, Mexican, and Cuban), the sample did not allow for adequate comparisons among these groups due to the small number of Mexican and Cuban respondents.

However, the sample did allow for comparisons among Puerto Rican and Other Latino respondents (which included Mexican and Cuban men). Results of Chi Square analyses comparing these two groups on predisposing and enabling variables are presented in Tables 13 and 14, respectively. Results of independent t-tests comparing groups on need variables are presented in Table 15. A statistically significant difference was found on one of the predisposing variables (racial identification; $X^2 = 6.24$, $p = .04$). In this case, Puerto Rican men with HIV/AIDS were more likely than Other Latino men to identify as White, and Other Latinos were more likely to identify as Black. No significant differences were noted between the two groups on any of the enabling or need variables.

Table 13

Bivariate Analyses of Predisposing Variables and Ethnic Subgroups

Variable	Ethnic Subgroup (%)		X^2	<i>df</i>	<i>p</i>
	Puerto Rican	Other Latino			
Racial Identification			6.24	2	.04
Black	31.4	56.0			
White	51.0	32.0			
Other	17.6	12.0			
Sexual Orientation			4.53	2	.10
Heterosexual	59.6	40.0			
Gay	31.9	40.0			
Bisexual	8.5	20.0			

Table 14

Bivariate Analyses of Enabling Variables and Ethnic Subgroups

Variable	Ethnic Subgroup (%)		X^2	<i>df</i>	<i>p</i>
	Puerto Rican	Other Latino			
Poverty/Income			.05	1	.83
Yes	50.0	47.7			
No	50.0	52.3			
Knowledge of VR			.02	1	.90
Yes	37.3	36.0			
No	62.7	64.0			
Receipt of Public Benefits			2.87	1	.09
Yes	64.7	48.0			
No	35.3	52.0			

Note. VR = Vocational Rehabilitation

Table 15

Bivariate Analyses of Need Variables and Ethnic Subgroups

Variable	Ethnic Subgroup				<i>t</i>	<i>df</i>	<i>p</i>
	Puerto Rican		Other Latino				
	M	SD	M	SD			
General Health Perception	48.37	21.87	52.21	20.91	-.90	99	.37
Confidence in Job Seeking Skills	4.50	1.80	4.18	2.20	.82	99	.41
Confidence in Maintaining Job	5.00	1.96	4.90	1.96	.24	99	.81

CHAPTER V: DISCUSSION

This study set out to identify and examine variables related to and predictive of the use of vocational rehabilitation (VR) services by Latino men with HIV/AIDS, including which variables differentiate Latino men with HIV/AIDS who utilize VR services from those who do not. This chapter provides an overview and interpretation of study findings per each research question, including descriptive findings, differences between VR users and non-VR users, variables that are predictive of VR service use, and ethnic subgroup differences in the sample. In addition, effectiveness of the application of the Andersen Behavioral Model of Service Utilization is discussed along with limitations of the study, implications for practice, and recommendations for future research.

Study Findings

Descriptive Characteristics

There is a paucity of information regarding the characteristics of Latino men with HIV/AIDS, and few studies to date have explored the impact of HIV/AIDS on the Latino population, particularly in terms of employment or VR issues (Burns et al., 2007). The following is a review of descriptive statistics to address research question one and describe the characteristics of the sample of Latino men with HIV/AIDS in New York State.

Regarding the outcome variable, findings indicated that the majority (70%) have not used VR services. This result is consistent with past studies investigating the use of VR services by Latinos and people living with HIV/AIDS (PLWHA). Conyers and Datti (2008a), for example, in their study on vocational rehabilitation needs of women with HIV/AIDS, found that more than three quarters of their sample had not utilized services. It is also consistent with Santiago et al.'s (1996) study investigating VR use by Latinos with disabilities, in which it was found that only

36% of their sample had used the services.

Almost half (48%) of Latino men with HIV/AIDS in this study identified as heterosexual as compared to gay or bisexual. This finding is not surprising, as the heterosexual male community (particularly men of color) has been becoming increasingly affected by HIV/AIDS particularly due to high risk heterosexual contact and intravenous drug use (Center for AIDS Prevention Studies, 2001). In addition, Puerto Rican men made up about half of the sample in this study. According to current research, Puerto Rican men with HIV/AIDS tend to become infected more so via intravenous drug use as opposed to unprotected male-to-male sex (CDC, 2007a), thus suggesting lower rates of gay and bisexual behavior among this group as compared to Other Latinos.

As noted, Puerto Rican men made up about half of this study's sample (50.5%), followed by Other Latinos (42%), Cubans (4%) and Mexicans (3%). The large number of Puerto Ricans is not surprising, as in New York State the largest subgroup of Latinos is Puerto Rican (Bose, 2006). In addition, Puerto Ricans make up the majority of AIDS cases in New York (Kaiser Foundation, 2000). With regard to racial identification, about an equal number of Latino men in this study identified as Black (44%) and White (42%). This finding is inconsistent with past research which indicates that the majority of Latinos tend to identify as White as compared to Black (e.g., Golash-Boza & Darity, 2008; Wilson, 2005); however, it is not surprising given the locale of the study, as New York has the highest concentration of Black Latinos (Logan, 2003). Many of those in the Other race category identified as multiracial; however, some provided an ethnicity as a response. The latter is consistent with past studies on the Latino population as well as U. S. Census data (e.g., Golash-Boza & Darity, 2008; Oropesa et al., 2008).

In this study, 44% of respondents reported living in poverty as compared to 46% who

were not. This result is somewhat consistent to that of the *HIV-Positive Voices in America* study in which it was found that 55% of Latino respondents reported living below 200% of the federal poverty line (Communities Advocating for Emergency AIDS Relief/National Association of People with AIDS, 2009). The rate of men in poverty in this study is also somewhat consistent with Krueger, Wood, Diehr, and Maxwell's (1990) study on poverty and seropositivity.

Researchers found that 48% and 67% of White and non-White men with HIV/AIDS in their large study (n = 2766) were impoverished. Interestingly, this study's findings are consistent with studies regarding poverty and Latino men who have sex with men (MSM), including a study cited by the CDC (2004) in which it was found that 47% of Mexican-born MSM and 59% of Puerto Rican-born MSM had annual incomes of less than \$10,000. Of men in the current study who identified as gay or bisexual, 52% of them also reported being in poverty, which is 8% higher than the overall mean percentage of those in poverty in the sample.

In terms of knowledge of VR services, almost two-thirds of the men in this study (63%) reported no knowledge of VR. While no other known studies directly measured this variable with Latinos with HIV/AIDS, these findings are somewhat consistent with Hernandez et al.'s (2006) study on Latino perspectives in VR and the Ticket to Work program. In this study, the investigators found that about half (51%) of Latinos reported having heard of VR. The current study's findings, however, are inconsistent with Santiago et al.'s (1996) study on Latinos with disabilities, in which all but 3% of their sample of 124 indicated they knew where to go for vocational rehabilitation services. Interestingly, the sample from Santiago and colleagues' study came from individuals recruited from telephone and city directories; however the sample from the Hernandez and colleagues' was comprised of individuals recruited from rehabilitation hospitals and disability related organizations, making it more likely that they would have been

exposed to information about VR. The same issue may have emerged in the current study, as some of the participants were recruited from agencies that have employment services and relationships with state VR offices (e.g., Gay Men's Health Crisis).

Over half of participants in the current study (56%) reported receiving public benefits (i.e., Supplemental Security Income [SSI] or Social Security Disability Income [SSDI]). This finding is consistent with other studies that measured public benefits for PLWHA. For example, in Conyers and Datti's (2008a) study, it was found that 56% of unemployed respondents reported receiving Social Security disability benefits. In addition, it is consistent with Escovitz and Donegan's (2005) study on the provision of employment supports to PLWHA. These investigators found that of 148 participants in the *Kirk Employment Empowerment Project*, 48% had received SSI, SSDI, or both. Interestingly, this finding is inconsistent with studies regarding VR service use and Social Security beneficiaries. For example, Kennedy et al. (2002) found that 70% of their sample of program applicants and beneficiaries had never received VR services. Moreover, it is inconsistent with trends of VR users in New York State. In 2007, of the over 22,000 cases that were closed by Vocational and Educational Services for Individuals with Disabilities (VESID), the state VR system in New York, only 36.6% of service recipients were SSI or SSDI beneficiaries.

The men in this study as a whole rated their general health perception (GHP) at the midpoint of a 0-100 scale on the MOS-HIV subscale ($M = 50.27$), indicating a moderate score in terms of health perception. It should be noted, however, that the standard deviation for this scale was somewhat high (21.38) and there were some extreme scores, both high and low. The mean finding is consistent with Burns et al.'s (2007) study on factors associated with employment for Latinos with HIV/AIDS. Using the *Physical Health Summary Scale*, these investigators found

that respondents' overall reported mean for physical health functioning was 45.90 on a 0-100 scale. Findings are also consistent with Razzano and Hamilton's (2005) study regarding health-related barriers to employment for PLWHA. In their study, using the MOS-HIV, researchers found an average GHP score of 47.80, with working participants reporting a higher mean score than the unemployed group (57.10 and 38.30, respectively). This trend was consistent in the current study as well, as the mean on this scale for those who were working was 55.61 as compared to 48.95 for those who were not.

In terms of confidence with job seeking skills, participants in the current study scored in the mid-range of the seven point Likert-type scale ($M = 4.34$). While no known studies specifically measured this variable with Latino men with HIV/AIDS, results are somewhat inconsistent with past research investigating this variable with people with disabilities in general. Hergenrather et al. (2008), for example, found in their sample of 577 people with disabilities that mean scores were in the high ranges of seven point Likert-type scales on the *Self-efficacy of Job-seeking Skills Scale* ($M = 5.90$ for the Independence Skills subscale, $M = 5.80$ for the Interview Management Skills subscale, and $M = 5.67$ for the Social Skills subscale). It should be noted that the sample from this study consisted of individuals who were being oriented VR. It is possible that since they have already taken the step to access services geared toward acquiring work, that their confidence levels may have been somewhat higher. With regard to confidence in ability to maintain a job, participants in the current study scored in the mid-high range of the seven point Likert-type scale ($M = 4.94$), indicating their perceived ability to maintain work was higher than their perceived ability to obtain it. No known studies, however, specifically addressed ability for job retention for Latino men with HIV/AIDS or other disabilities; therefore, it represents a variable that may need further investigation.

Lastly, the sample's employment statuses were reflective of what is known about employment statuses of PLWHA. Respondents consisted of about 80% unemployed and 20% employed participants, which is similar to past research studies on the employment of PLWHA. Studies have consistently shown unemployment rates for this population well over 50% (Dray-Spira et al., 2005). In a study by Montoya, Trevino, and Kreitz (1999) regarding access to HIV/AIDS care, researchers found that only 22% of Latinos in their sample were employed either full or part-time. In a large study of almost 2000 PLWHA, Fleishman (1998) found that approximately 65% of participants were unemployed. Furthermore, in a more recent study, Maguire et al. (2008) found that almost 90% of their sample of 93 PLWHA was unemployed.

Differences between VR and Non-VR Users

Research question number two intended to determine which predisposing, enabling, and need variables differentiated Latino men with HIV/AIDS who utilized VR services from those who did not. Results indicate statistically significant differences between VR users and non-VR users with regard to the enabling variable, knowledge of VR. As expected, Chi Square findings indicated that users of VR differed from non-users in that those with knowledge of the services used them to significantly greater extents than those without knowledge ($p < .001$). This result adds support to the hypothesis that individuals who do not report knowledge of VR services will be less likely to have utilized them. While it is not a new idea that individuals are not likely to use services in which they are unaware, no known studies have measured knowledge of VR by Latino men with HIV/AIDS; therefore, it represents a variable that may need further investigation.

Variables Predictive of VR Use

This study found that ethnicity, knowledge of VR, poverty/income, and confidence in

ability to maintain a job were predictive of VR use by Latino men with HIV/AIDS; thus representing four out of the nine variables within the domains of the Andersen model. With regard to ethnicity, Puerto Rican ethnicity was a significant predisposing predictor for use of services ($p < .01$), and odds ratios indicate that Puerto Rican men are about 17 times more likely to have used VR services. This finding provided some support to the hypothesis that Cuban and Puerto Rican men would be more likely to have utilized VR services than Mexican men, and is consistent with past research on service utilization by Latinos. For example, Solis, Garcia, Shelton, and Marks (1990) in their study on Latinos access to care and preventative services, found that Puerto Rican and Cuban individuals were more likely than Mexicans to use preventative services. In addition, Durden and Hummer (2006), in their study on Latinos use of healthcare, found that Puerto Ricans had higher odds of reporting access to a regular source of care than other Latino groups. In addition, in Weinick, Jacobs, Stone, Ortega, and Burstin's (2004) study, it was found that Mexican Americans and Cubans were less likely to have emergency room visits, while Puerto Ricans were more likely in comparison to non-Latino Whites. Interestingly, findings from Santiago et al.'s (1996) study on Latinos with disabilities and their use of rehabilitation services contradicts this trend. These investigators found that odds of receiving services were about 86% lower for Puerto Ricans as compared to Mexican respondents.

U.S. citizenship may be a factor related Puerto Ricans greater use of VR than Other Latinos in the current study. Whether born in Puerto Rico or on the mainland, as U.S. citizens who are legally eligible to work, these individuals are eligible for VR services if they have a qualifying disability (California Department of Vocational Rehabilitation, 2008; Mastandrea, n.d.). This requirement may not be the case for some in the Other Latino group, which contains

all other Latinos in the sample who are not Puerto Rican, and thus they may not all meet legal eligibility requirements. Another possibility may be related to racial identification. Past studies have shown that Latinos who identify as White have higher acceptance rates into VR than those who identify as Black (e.g., Wilson, 2005), and Puerto Ricans more often identify as White as compared to Black (Oropesa et al., 2008). The latter is a finding that was consistent in the current study.

In the enabling domain, knowledge of VR and poverty/income were found to be significant predictors of VR use ($p < .001$ and $p = .05$, respectively). The significance of knowledge of VR adds further support to the hypothesis that Latino men with HIV/AIDS who are knowledgeable of VR are more likely to have used the service. This variable was, in fact, the most predictive of VR use in this study, as odds ratios indicate that men with knowledge were almost 200 times more likely to use the services. This outcome is not surprising, as conventional wisdom dictates that use of a service is contingent upon knowledge of that service. This finding, however, adds empirical evidence to this notion and demonstrates that VR utilization is significantly related to knowledge of it for Latino men with HIV/AIDS in the sample. With regard to poverty/income, findings do not support to the hypothesis that those in poverty are less likely to have utilized VR services. In fact, odds ratios indicated that poor men were about seven times more likely to have used VR than non-poor men. This finding is inconsistent with the broader body of research on poverty's negative effects on service access and utilization. For example, it is inconsistent with Flores et al.'s (1999) study involving the *National Health Interview Surveys* data sets, which found that poverty was significantly associated with excessive intervals between doctor visits for Latinos; thus suggesting lesser use of services. It is also inconsistent with results of the *HIV Cost and Services Utilization Study* in terms of mental health

service use. In this study, it was found that lower socioeconomic status was associated with poorer access to these services for PLWHA (Beckett et al., 2007; Burnam et al., 2001).

In the need domain, confidence in ability to maintain a job was a significant predictor of VR use ($p = .04$). Contrary to the hypothesis that those with less confidence in this area would be more likely to use VR services, findings actually indicate the opposite. In fact, odds ratios indicate that for every increase of one on this scale, likelihood of VR use increased by a factor of 1.59. It could have been that less confidence with this ability did not actually denote an increased need for VR services. Nonetheless, this finding suggests that one's confidence in this area is related to their use of the services. While no known studies measured Latinos or PLWHA's confidence in maintaining work as it relates to VR service use, findings reflect those Hall's (2007) study on African American with disabilities and their use of VR services. Via bivariate analyses, the researcher found that those who reported their ability to keep a job was not limited by their disability were more likely to currently use VR. This trend in the current sample may be due in part to perception of ability to work. That is, if the men wanted to work and believed they could maintain a job, they may have been more inclined to utilize VR services to assist with vocational goals.

Ethnic Subgroup Differences

While it was originally intended to make comparisons among the three largest subgroups of Latino men in the U.S., this study only allowed for comparisons among Puerto Rican and Other Latino men (the latter included Mexicans and Cubans) with HIV/AIDS. Racial identification was a predisposing variable that was found to significantly differentiate Puerto Rican men with HIV/AIDS from Other Latino men in New York State ($p = .04$). In this case, Puerto Rican men with HIV/AIDS were more likely than Other Latino men to identify as White

as compared to Black or Other racial identification. This finding reflects U. S. national and state census data. In 2000, national census data revealed that about 49% of Puerto Ricans identified as White as compared to about 8% Black (Logan, 2003). In New York State, 2000 census data indicated that 43% of Puerto Ricans identified as White as compared to 8% Black (Oropesa et al., 2008). Interestingly, with the exception of Dominicans, Puerto Ricans also most frequently identified as Black as compared to all other Latino ethnic subgroups in the nation (Logan).

Usefulness of Andersen's Model

In this study, Andersen's *Behavioral Model of Service Utilization* was adapted and applied to examine variables associated with VR use among Latino men with HIV/AIDS. The study provided support that the Andersen model is an appropriate theoretical framework for understanding and predicting the use of VR by the men in the sample. As the most widely used model for studying service utilization (Lemming & Calsyn, 2004), the model provided an organized framework for identifying and examining variables related to VR utilization for the men in the sample. In this study, at least one variable from each of the model domains, (predisposing, enabling, and need) was a significant predictor of VR use in the regression model. The predisposing demographic characteristic of ethnicity was related to VR use, as were the enabling resources of knowledge of VR and poverty/income. Andersen based his original and subsequent adaptations of his model on equitable use of services (Andersen, 1968, 1995). He contended that need variables ought to have the greater influence on service utilization, and describes inequitable use as occurring when predisposing and enabling variables determine who gets care (Andersen, 1995). When considering this notion, the statistical outcomes in this study suggest that there is inequitable use of VR services for Latino men with HIV/AIDS in New York State. Further, while a need variable in this study (confidence in maintaining a job) was

significantly predictive of VR service use, findings suggest that a higher confidence in this area was actually associated with the greater use; therefore the hypothesis that lesser confidence with maintaining work suggests greater need may have been incorrect.

Study Limitations

This study is not without limitations that need to be considered when interpreting findings and considering results in relation to implications for practice and future research. First, the sample size was somewhat small. Although it was large enough to reach adequacy for the statistical analyses used in the study, a larger sample may have allowed for more precise estimates as well as increased potential for generalizability. Further, the use of a convenience sample can also be considered a limitation as it too can limit generalizability to the broader population of Latino men with HIV/AIDS. Although the sample was in many ways representative of Latino men with HIV/AIDS in New York State, participants were recruited solely through AIDS service organizations (ASOs) and networks associated with the New York AIDS Institute; thus it did not account for the those not associated with such agencies nor for the larger population of Latino men with HIV/AIDS in the nation. In addition, the sample did not fully capture the diversity of the Latino male population with HIV/AIDS in that it contained a limited number of Mexican and Cuban respondents. These ethnic subgroups, while not the largest in New York, are two of the largest in the nation along with the Puerto Rican population.

Another limitation of the study is its use of a cross-sectional data set, which can have limitations on understanding the mechanisms behind use or non-use of VR. Simply stated, there may have been several other reasons for use or non-use that were not addressed in this study or that occurred at different points in time. For example, as an episodic disability, HIV/AIDS tends to cause health changes that vary among individuals and in different periods of time; therefore,

we can only consider physical and mental conditions of respondents at the time of the survey completion. This situation can have implications as to whether men considered or actually used VR services as their health may have affected their decision to do so or not. The same issue may have come into play with receipt of public benefits or confidence in obtaining or maintaining a job. Further, it is possible that some respondents' physicians or other service providers may have recommended they do not work, therefore decreasing their chances of using VR and potentially affecting how they responded to related questions.

In addition, this study relied solely on self-report from respondents. The information reflected perceptions of participants only, and involved no other form of measure. There may be issues with this approach in relation to social desirability, as respondents may have desired to appear in a more positive light or in-line with perceived community standards, rather than respond accordingly if the case was otherwise. In addition to social desirability, other types of response bias need to be considered. For example, the NWPC-VTES contains many questions related to finances and public benefits, as well as an item regarding U. S. citizenship. It is possible that some respondents may have avoided answering some questions or answered them inaccurately if they perceived their benefits or ability to remain in the country as being in jeopardy. Further, the citizenship item on the survey does not have a direct response possibility for undocumented individuals; rather, it calls for individuals who are not citizens or permanent residents to choose "other." This has implications for response bias, and does not allow for more accurate measure of documentation status; therefore it was not possible to determine whether any respondents were indeed documented or not, nor allow for comparisons among such groups.

Another limitation to the study lied in the operationalization of some of its variables. The actual values for poverty, for example, are not exact in all instances. While all individuals who

reported income of less than \$10,000 regardless of number of others in the household were considered in poverty as per U.S. poverty guidelines, other options for this variable were less clear. For example, the U.S. poverty guideline for households of two persons is \$14,570 (U.S. Department of Health and Human Services, 2009). While individuals with two persons in the household who selected the option of \$10-15,000 were likely in poverty (and were coded as such), there is a slight chance they were not (i.e., their income was above \$14,570, yet below \$15,000). In addition, confidence with job seeking skills and confidence in ability to maintain a job were continuous variables limited to one item each on the survey. Particularly for the job seeking item, it is possible that some respondents were not clear as to the meaning of job seeking skills and may have perceived it as something other than it was operationalized. Perhaps it would have been beneficial to have an item that inquired about confidence in “ability to find a job” in order to make it more consistent with the latter item. Also, while all materials were available in English or Spanish, it is possible that dialects and word meaning varied across the subgroups of Spanish-speaking Latino men as well as English speakers; thus potentially leaving room for misinterpretation of some variable items.

Implications for Practice

As noted by Andersen, inequitable access to services occurs when predisposing and enabling variables determine who gets care (Andersen, 1995). This is important for rehabilitation counselors and related professionals to consider, particularly in terms of predisposing characteristics that cannot be changed (e.g., sexual orientation, ethnicity, race), so that there is opportunity to reduce any disparities in VR services. In this study, Puerto Rican ethnicity significantly predicted utilization in this study; therefore, reducing the effects of Latino ethnicity differences on VR use should be considered. While all Latinos, including Puerto Ricans, remain

a marginalized group in terms of service utilization, counselors and other service providers would benefit from increased knowledge and competence regarding Latino ethnicity and from understanding the differences between each ethnic subgroup. To that end, and given that the state-federal VR system in the U.S. tends to reflect Western culture and U.S. values (Thompson, 1997), vocational rehabilitation counselors and related professionals should be cognizant of the possibility of multiple discrimination for Latino men with HIV/AIDS. These individuals are likely to have multiple cultural identifications and at the same time may be subject to discrimination based on variables such as race and/or sexual orientation in addition to ethnicity (Diaz, Ayala, & Marin, 2000; Senices, 2005). Recognizing and addressing these issues can foster more appropriate and equitable services for Latino men with HIV/AIDS.

Andersen (1995) also discussed the concept of mutability as being important for using the behavioral model to promote equitable access. He noted that enabling variables, unlike predisposing variables, are more mutable. This relationship is important to consider so that there is opportunity to reduce negative effects of enabling variables on VR service use. With regard to this statement, knowledge of VR was a variable that predicted the use of VR services in this study. The intentional capture and communication of empirical evidence that supports lack of knowledge of VR services resulting in reduced use for Latino men with HIV/AIDS brings awareness to the profession and may allow for intervention. Since findings indicated that most Latino men with HIV/AIDS in the sample were not knowledgeable of VR services, it is possible that inappropriate or limited outreach is a factor in their unawareness. Typically, state VR systems have not generated adequate participation among ethnic and racial disability groups (Quinones-Mayo et al., 2000). Although recent funding and initiatives have been provided to improve services and increase outreach to Latinos and other ethnically diverse populations

(Moore et al., 2005; Proyecto Vision, n.d.), increased and more appropriate outreach and advertising to Latinos and other minority populations may prove beneficial.

In 2006 in New York State, VESID implemented the *Designing Our Future* recommendations, which included plans to increase marketing of their services to consumers as well as expand and diversify its outreach, including targeting Spanish speaking populations (New York State Education Department, 2006). This strategy is promising; however, further specific initiatives with regard to outreach may benefit the Latino population with HIV/AIDS even more. For example, VR outreach programs can target inner city and suburban areas with high Latino and PLWHA concentrations via advertising materials, televised broadcasts, and the development of networking initiatives between VR agencies and local Latino and HIV-related community groups. Another option would be to use promotodores(as) in outreach by VR agencies. Promotodores(as) are Latino/a community outreach workers who raise awareness of health and related issues (Migrant Health Promotions, 2005). Use of promotodores(as) has been effective in several areas of educational, health, and related interventions and outreach initiatives in the Latino community (Gonzales et al., 2009). In an effort to promote effective language and culturally sensitive outreach to the Latino community, VR agencies can work in partnership with promotodores(as) on initiatives to increase awareness and use of their services.

In considering outreach and services to Latinos, language is a key factor that should be considered. Latinos who speak or read little or no English may be more likely to enter into and use services in which they believe they will be able to effectively communicate. In addition, studies have shown that offering services in Spanish can extend service utilization (Sue, Fujino, Hu, Takeuchi, & Zane, 1991). Limited numbers of Spanish-speaking counselors represent a barrier to service utilization for many Latinos, and active recruitment of bilingual counselors is

recommended (Prieto, McNeil, Walls, & Gomez, 2001; Sue et al.). While some VR agencies and counselors may have and advertise the availability of Spanish communication, those who do not may be deterring consumers in need of services from accessing them. In New York State, VESID counselors who are to work with Spanish-speaking consumers have specific skill level requirements (New York State Education Department, n.d.) and the agencies have materials translated into Spanish (U.S. Department of Education, 2007). While this practice encouraging, perhaps an increase in deliberate advertisement of such available services to the Spanish-speaking Latino community with HIV/AIDS would be beneficial. For example, portions of English advertising materials and broadcasts can display (in Spanish) the availability of Spanish materials and programs, or they can be made available in their entirety in Spanish. In addition, these outreach and advertising materials could advise that Spanish-speaking counselors are available.

In addition, closer relationships and networking between ASOs and VR agencies would also likely benefit Latino men and other PLWHA who are in need of vocational assistance (Conyers & Misrock, 2007). ASOs provide medical and other primary services specifically to PLWHA, and as such, it is possible that some consumers with HIV/AIDS may feel more comfortable receiving services from these organizations as opposed to others without specific HIV/AIDS consumer bases (Conyers, 2004a). For the most part, however, ASOs do not have adequate funding or trained personnel to provide vocational rehabilitation services to their consumer base (Conyers & Datti, 2008a). PLWHA who are in need of vocational services yet are uncomfortable with or unaware of services outside of ASOs may have limited options for receiving such assistance. Conyers and Misrok (2007) suggest that VR professionals reach out to ASOs and develop networks to allow for consumers to obtain information and access to VR

services. Specifically, they suggest that liaisons from state-federal VR programs work with ASO staff and consumers to assist with information exchange, perhaps by way of workshops and information sessions in ASOs. This suggestion seems a viable and low cost way of increasing knowledge of VR services for ASO consumers as well as staff members. In addition, providing vocational services within ASOs seems a beneficial practice to assist many individuals with vocational needs, who are otherwise unable or unwilling to access state VR services (Conyers, Escovitz, & Misrok, 2006). This should be considered as funding allows.

For Latino men and other PLWHA who do access VR services, many of their unique issues and concerns related to employment may go unaddressed or are beyond the scope of competence of many vocational rehabilitation providers (Kohlenberg & Watts, 2003). In fact, studies have shown that rehabilitation counselors need specialized training and experience to work successfully with PLWHA (e.g., Glenn et al., 2003). It is incumbent of vocational rehabilitation counselors to become and remain competent with working with individuals with HIV disease, including having full understanding and ability to address unique issues such as the episodic nature of disability, medication side effects, and increased stigma (Conyers & Datti, 2008a). Conyers and Datti recommend vocational rehabilitation counselors become familiar with the *Client-Focused Considering Work Model* (Goldblum & Kohlenberg, 2005). This model outlines four domains of considering work (medical, financial/legal, psychosocial, and vocational) specifically for PLWHA and describes phases of the vocational rehabilitation process for individuals living with the disease. The model can be helpful for counselors in understanding and navigating the unique challenges for PLWHA as they go through the vocational rehabilitation process.

Recommendations for Future Research

This study investigated factors that are associated with HIV-positive Latino men's use of VR services in New York State. Replication of this study in other states as well as on the national level in order to better capture the broader population of Latino men with HIV/AIDS is recommended. For example, in addition to New York, the other states with highest Latino AIDS rates per capita include Massachusetts, Connecticut, Pennsylvania, and the District of Columbia (NASTAD, 2004). It may be beneficial to repeat this study in these states, where the Latino population is much affected by HIV/AIDS. In addition, since participants in this study were recruited solely through ASOs and networks, it would prove beneficial to target individuals not only associated with other such agencies, but with various other entities (e.g., non-AIDS related community agencies, medical clinics, informal networks) in an effort to be inclusive of Latino men with HIV/AIDS who may not be associated with HIV/AIDS-related agencies.

Further, this study's sample size precluded the ability to take an in-depth look at the ethnic subgroup differences of Latino men with HIV/AIDS. Because of the reality of such differences, researchers have suggested that Latino individuals be studied within particular groups (e.g., Mexican, Puerto Rican, Cuban, etc.) rather than grouping Latinos into one collective ethnic group (Umana-Taylor & Fine, 2001); therefore, further comparative research among Latino subgroups is recommended. By addressing national origin and other within group differences, researchers can glean more specific information as to similarities and differences among the subgroups, which in turn can be used to formulate even more specific and appropriate outreach and programming for these underserved populations.

Future similar studies are needed to address variables that were not addressed in this study and that may be associated with VR service use by Latino men with HIV/AIDS. This study

utilized the Andersen model and concentrated on predisposing, enabling, and need domains. There are several other variables within these domains that may be important factors related to VR service use (e.g., age, residential locale, language, U.S. citizenship, presence of non-HIV related disabilities) that should be investigated. Further, this study included only men, thus not addressing variables that may be related to VR use by Latina women or transgender individuals nor allowing for any comparisons between these groups. It is recommended that future studies involve such comparisons so that we can glean a better picture of the VR and related service use patterns and factors related to it for various Latino gender populations with HIV/AIDS. It would also be beneficial to conduct similar studies that compare VR use and experiences among Latinos with HIV/AIDS and other ethnic and racial groups, including non-Latino Whites and African Americans to determine potential important differences and needs among groups.

In addition, some of the variables included in this study approached statistical significance and deserve further investigation. Among enabling variables, for example, receipt of public benefits approached significance ($p = .07$) in terms of differentiating VR users and non-VR users. In this case, those who have used VR were more likely to have received public benefits. These results are surprising given that several studies suggest negative perceptions and beliefs about the relationship of employment to public benefits. Several studies (e.g., Conyers 2004b; Conyers & Datti, 2008a; Glenn et al., 2003) have found that fear of losing benefits was a disincentive for PLWHA to return to or begin work, and findings in this study seem to contradict that trend. In addition, this variable approached significance with regard to differentiating men in the Latino subgroups. In this case, beneficiaries were more likely to be Puerto Rican, which is consistent with the Social Security Administration reports (Martin, 2007). As U.S. citizens, Puerto Ricans are eligible for SSI and SSDI benefits; whereas those who are not citizens or

otherwise eligible to work in the U.S. are not eligible (SSA, 2009b, 2009c). It is possible that some in the Other Latino category may not be citizens, legal residents, or otherwise legally eligible for benefits. A more comprehensive look at this relationship would be beneficial. With regard to need variables, GHP approached statistical significance as well ($p = .08$). In this case, non-VR users had a lower mean score on the GHP scale than those who used VR; thus suggesting that the better an individual perceives his health the more likely he will be to have used VR Services. This result is consistent with past studies on PLWHA (Razzano & Hamilton, 2005) and Latinos with HIV/AIDS and employment status (Burns et al., 2007) and may warrant further investigation regarding Latino men with HIV/AIDS and their use of VR services.

Overall, there is a lack of research examining experiences of Latinos in the VR system (Edwards & Wilson, 2005), including Latino men with HIV/AIDS. This problem suggests the need not only for additional quantitative studies, but for thoughtful qualitative studies in order to explore the processes behind potential relationships of variables related to VR use and to provide for a deeper understanding of constructs. For example, in-depth interviews or focus groups could be conducted among Latino men with HIV/AIDS of various sexual orientations, ethnicities, and racial identifications to investigate the similar or different themes that emerge in terms of these variables as they relate to VR service use. Finally, while state VR services are a viable alternative for many Latino men with HIV/AIDS in need of vocational services, some may not be eligible for them or prefer not to receive services from them; therefore, it would be beneficial to develop and empirically evaluate additional viable alternative vocational programs (e.g., in ASOs). While some ASOs and related agencies developed such programs (e.g., Gay Men's Health Crisis in New York City, Positive Resource Center in San Francisco) and other HIV-specific employment services have recently been emerging (Conyers et al., 2006), empirical

evaluation of these programs can aid in determining their appropriateness and effectiveness for Latino men and other PLWHA; thus allowing for more access to vocational services for Latino men with HIV/AIDS and other marginalized groups.

Conclusion

The purpose of this study was to identify and examine variables related to and predictive of the use of VR services by Latino men with HIV/AIDS in New York State, including which variables differentiate those who utilize VR services from those who do not. Additionally, this study sought to examine ethnic subgroup differences among a sample from this population. Results indicated that differences exist between VR users and non-VR users in terms their knowledge of the services. In addition, the study demonstrated that the Andersen model variables of ethnicity, knowledge of VR, poverty/income, and confidence in ability to maintain employment were predictive of VR use for the Latino men with HIV/AIDS in the sample. While no ethnic subgroup differences existed with regard to VR use, differences in racial identification of the groups were noted.

This study is one of the few to examine differences among those PLWHA who have used VR services and those who have not, and it is the first known study to specifically investigate VR service use variables among Latino men with HIV/AIDS. This study extends the rehabilitation literature on HIV/AIDS and employment as well as the Latino community, and extends the service utilization literature particularly with regard to the Andersen model. Findings add to professional knowledge with regard to identification of some of this population's characteristics as well as their potential patterns, needs, and barriers to VR service utilization. Additionally, the study allowed for identification of differences in VR service use among Latino men with HIV/AIDS and variables that affect it. Increased understanding of variables associated

with use of VR services by this population can foster the provision of appropriate outreach and culturally sensitive services by vocational rehabilitation counselors and other professionals. In addition, it can assist in the development of advocacy and policy initiatives and culturally appropriate programming in state VR and related systems. In order for state VR and related systems to provide appropriate services to minority populations such as Latino men with HIV/AIDS, the nature of their characteristics, patterns of VR use, and factors that may affect it must be identified and thoughtfully addressed. Further, the more we know about differences in service use that may exist among groups, the more able we are to target the underlying causes and bridge the gaps as needed.

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Appendix A

Survey Items Measuring Variables in the Study

Utilization of VR Services

Since being diagnosed with HIV/AIDS, what services have you received in the past, are currently receiving, or have never received? (check all that apply):

	Received in Past	Currently Receiving	Never Received
Ongoing medical care?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Security benefits counseling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Case management services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Services to help keep a job?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Counseling for personal concerns of mental health issues?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treatment for drug or alcohol abuse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
One Stop Career/Workforce Center Services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State vocational rehabilitation services (such as OVR, VESID, Department of Vocational Rehabilitation, etc)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sexual Orientation

What is your sexual orientation?

Heterosexual/Straight Gay/Lesbian Bisexual Other: _____

Ethnicity

Are you Latino, Hispanic, or Spanish? If yes, please specify:

No, not Latino/Hispanic/Spanish Mexican, Mexican American, Chicano

Cuban, Cuban American Other Latino/Hispanic/Spanish: _____

Puerto Rican

Racial Identification

What is your race? (chosed only one category):

- | | |
|---|---|
| <input type="radio"/> Black, Latino/Hispanic | <input type="radio"/> American Indian or Alaska Native |
| <input type="radio"/> Black, African American | <input type="radio"/> Native Hawaiian or Other Pacific Islander |
| <input type="radio"/> Black, West Indian/Caribbean | <input type="radio"/> Asian: _____ |
| <input type="radio"/> Black, African | <input type="radio"/> Multiracial: _____ |
| <input type="radio"/> White, European American, not Latino/Hispanic | <input type="radio"/> Other: _____ |
| <input type="radio"/> White, Latino/Hispanic | |

Poverty/Income

What is your approximate yearly household (shared) income?

- | | | |
|-------------------------------------|-------------------------------------|---------------------------------------|
| <input type="radio"/> 0-10,000 | <input type="radio"/> 30,001-35,000 | <input type="radio"/> 55,001-65,000 |
| <input type="radio"/> 10,001-15,000 | <input type="radio"/> 35,001-40,000 | <input type="radio"/> 50,001-55,000 |
| <input type="radio"/> 15,001-20,000 | <input type="radio"/> 40,001-45,000 | <input type="radio"/> 75,001-99,999 |
| <input type="radio"/> 20,001-25,000 | <input type="radio"/> 45,001-50,000 | <input type="radio"/> 100,000-200,000 |
| <input type="radio"/> 25,001-30,000 | <input type="radio"/> 50,001-55,000 | <input type="radio"/> Over 200,000 |

How many people live in your (shared-income) household? _____

Knowledge of VR

Which of the following do you know about? (check all that apply):

- | | |
|--|--|
| <input type="checkbox"/> State Vocational Rehabilitation | <input type="checkbox"/> Extended Medicare |
| <input type="checkbox"/> Americans with Disabilities Act (ADA) | <input type="checkbox"/> Trial Work Period |
| <input type="checkbox"/> Family and Medical Leave Act (FMLA) | <input type="checkbox"/> Ticket to Work |
| <input type="checkbox"/> Workforce Investment Act (WIA) | <input type="checkbox"/> Reasonable Accommodations |
| <input type="checkbox"/> One Stop Career/workforce Centers | <input type="checkbox"/> Health Insurance Portability & Accountability Act-HIPAA |
| <input type="checkbox"/> Tribal Vocational Rehabilitation | <input type="checkbox"/> None of these |

Receipt of Public Benefits

Which income benefits have you received in the past, are currently receiving, or have never received? (check all that apply):

	Received in Past	Currently Receiving	Never Received
Supplemental Security Income (SSI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Security Disability Insurance (SSDI) State Disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private long-term disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Housing Subsidy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TANF/medical assistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

General Health Perception

In general, would you say your health is:

Excellent Very Good Good Fair Poor

Please check the one answer that best describes whether each of the following statements is true or false for you:

	Definitely true	Mostly true	Not sure	Mostly false	Definitely false
I am somewhat ill.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am as healthy as anybody I know.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My health is excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been feeling bad lately.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Confidence with Job Seeking Skills

On a scale of 1 (No Confidence) to 7 (Extremely Confident) rate the following:

	1	2	3	4	5	6	7
How confident are you in your job seeking skills?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Confidence in Maintaining a Job

On a scale of 1 (No Confidence) to 7 (Extremely Confident) rate the following:

	1	2	3	4	5	6	7
How confident are you that you could hold on to a job once you had it?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note. AIDS = acquired immunodeficiency syndrome; HIV = human immunodeficiency virus;

TANF = Temporary Assistance for Needy Families; VESID = Vocational and Educational

Services for Individuals with Disabilities; VR = vocational rehabilitation.

Appendix B

Other Descriptive Variable Survey Items

Age

What is your age? _____

HIV Status

What is your current HIV status?

- HIV Positive
- AIDS
- I do not have HIV or AIDS

Employment Status

Are you currently working/employed?

- Yes No

Years of Education Completed

What was the highest level of education you have completed?

- Less than high school Trade school Four-year college degree
- Some high school Some college Post-graduate
- High school graduate/GED Two-year college degree

Note. AIDS = acquired immunodeficiency syndrome; HIV = human immunodeficiency virus.

VITA

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EDUCATION

Ph.D., Counselor Education and Supervision, Penn State University, December 2009 (expected)
M.S., Rehabilitation Counseling, University of Scranton, December 1993
B.A., Psychology, Penn State University, December 1990

PROFESSIONAL EXPERIENCE

Faculty Member, Department of Counseling and Human Services, University of Scranton, Scranton, PA, August 2005 – present (part-time August 2006 – August 2009).

Counselor, The AIDS Project, State College, PA, January, 2008 – July 2009.

Vocational Services Supervisor, Vocational Assessment Services, Incorporated, Washington, DC/Miami, FL, November 1999 – August 2006 (Part-time from June 2004 – August 2006).

Disability Management Specialist, Miami-Dade County (General Services Administration), Miami, FL, June 2004 – August 2005.

Program Coordinator/Qualified Mental Retardation Professional, Program Development Services, Incorporated, Brooklyn, NY, August 1996 – January 2000.

PUBLICATIONS

Datti, P. A. (2009). Applying social learning theory of career decision making to gay, lesbian, bisexual, transgender, and questioning young adults. *Career Development Quarterly*, 58, 54-64.

Conyers, L. M., & Datti, P. A. (2008). The unmet vocational rehabilitation needs of women with HIV. *Work: A Journal of Prevention, Assessment, and Rehabilitation*, 31(3), 277-290.

SELECT PRESENTATIONS

Datti, P. A. (2009, February). *Vocational rehabilitation programs and AIDS service organizations: A pilot study for rural and small town men with HIV/AIDS*. Lecture presentation with research description provided the National Council on Rehabilitation Education annual conference, San Antonio, TX.

Datti, P. A. (2007, October). *Gay, lesbian, bisexual, and transgender career issues: A social learning approach*. Lecture presentation provided at the annual conference of the Pennsylvania Counseling Association, State College, PA.