AN INVESTIGATION OF SELECTED FACTORS CORRELATING TO
VOCATIONAL REHABILITATION OUTCOMES

by

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A Dissertation Submitted to the Faculty of the
DEPARTMENT OF SPECIAL EDUCATION, REHABILITATION
AND SCHOOL PSYCHOLOGY

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College
THE UNIVERSITY OF ARIZONA

2005
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Signed: Priscilla Rose Sanderson
ACKNOWLEDGMENTS

I wish to extend a big thank you to my committee members, Amos Sales as my chair, Les McAllan, Susan Moore, Karen Applequist, and Jim Chalfant.

This study would not have been made possible without the cooperation of the Arizona Rehabilitation Services Administration. Alan Price went above and beyond as a liaison to ensure that data were provided in a timely manner. A sincere gratitude is extended to the vocational rehabilitation supervisors and their designees and human resources personnel.

A special gratitude goes to Timothy Ken Sanderson, my husband for his warmth, support, and mentoring with his contagious enthusiasm for the rehabilitation profession.

I want to thank my family (parents, sisters and their family) and extended family on the Navajo Nation and friends and colleagues for their expertise and support.
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ABSTRACT

There was limited information regarding the number of disability related impairments, length of case management, number of counselors who served an individual consumer, and counselor qualifications (including level of education, Certified Rehabilitation Counselor, the length of employment in years, and assignment as a general/specialty caseload) and their impact on vocational rehabilitation outcomes. The purpose of this research was to investigate selected factors (described above) that might be associated with state-federal vocational rehabilitation outcomes. On this basis, there were four research questions developed.

The study sample was 171 vocational rehabilitation counselors with Arizona Rehabilitation Services Administration and 215 most significant/significant disabled consumers. These 215 disabled consumers were either closed successful or unsuccessful from March 1, 2002 through February 28, 2003.

The dependent variable was the vocational rehabilitation closure. There were two levels (1) successful employment closure in Status 26 and (2) unsuccessful closure, after an Individual Plan for Employment was implemented but not completed, in Status 28. Seven predictor variables were tested at an alpha level of .05. Each predictor variable was non-significant with an analysis of variance (ANOVA). Future research may help identify additional consumer and counselor factors that have an impact on vocational rehabilitation outcomes.
CHAPTER 1
INTRODUCTION

In the field of vocational rehabilitation, consumer outcomes are the basis for determinations of success or failure. Since the working relationship of the consumer and the vocational rehabilitation counselor is the heart of the vocational rehabilitation process, considerable research interest has focused on aspects of this relationship thought to be related to consumer outcomes. Researchers who have conducted empirical studies have focused on consumer outcomes relative to professional counselor qualifications and counselor work experience that may have contributed to a successful or unsuccessful outcome. In this study, the focus was on investigating selected factors such as: the number of disability related impairments, the length of case management activities, the number of counselors a consumer had during rehabilitation services, counselor qualifications including education, certification, length of employment, and assignment as general/specialty caseload that may be associated with successful or unsuccessful outcome. This study, in addition to those conducted by previous researchers, included the number of counselors a consumer had during their rehabilitation process and the impact that may have had on the outcome (successful or unsuccessful closure).

Background and Need for the Study

The public vocational rehabilitation program, throughout the years, has expanded its services to a more diverse and heterogeneous population of persons with disabilities with the goal of successful employment. Most notably, services have been expanded to individuals with significant and most significant disabilities, multiple and chronic.

The ultimate goal of vocational rehabilitation has been employment. As Bolton (1990) noted, competitive employment for vocational rehabilitation consumers resulted in a higher level of self-esteem, productive societal participation, and self-sufficiency in the larger community. Historically, studies have assessed the public vocational rehabilitation program by focusing on the number of successful employment closures of consumers with the most significant disabilities (Gamble & Satcher, 2002; Bolton, Bellini, & Brookings, 2000). Researchers have also focused on the professional qualifications and work experience of vocational rehabilitation counselors who provided services for consumers with the most significant disabilities (Mullins & Roessler, 1998; Mullins, Roessler, Schriner, Brown, & Bellini, 1997; Szymanski, 1991).

Researchers who conducted empirical studies found a higher rate of employment outcomes for counselors with a masters degree in rehabilitation counseling than counselors with an unrelated bachelors or masters degree (Szymanski & Danek, 1992; Szymanski & Parker, 1989a). Additionally, consumer outcomes and caseload size were highly correlated with employment outcomes (Emener, 1980).

The 1998 Rehabilitation Act, as amended, provided for rehabilitation counselor education programs to train public vocational rehabilitation counselors to meet the federal requirements of “qualified” counselor, which included having a masters degree in
rehabilitation counseling from a Council on Rehabilitation Education (CORE)-accredited rehabilitation counselor education program or a degree in a closely related field, and a Certified Rehabilitation Counselor (CRC) certification (25th Institute on Rehabilitation Issues, 1999).

Statement of the Problem

Rehabilitation counseling researchers have focused on studying the outcomes of rehabilitation consumers for decades, and will continue to do so to improve rehabilitation services to consumers (Gamble & Satcher, 2002; Bolton, Bellini, & Brookings, 2000, Szymanski & Danek, 1992; Emener, 1980). Counselor turnover was a problem as it negatively impacted the length of case management activities. The length of case management activities had an effect on the consumer’s employment. The attrition of vocational rehabilitation counselors and its impact on each consumer’s vocational rehabilitation process has been an issue for the public vocational rehabilitation program (Kelley, Dixon, Emener, & Wright, 1999). Vocational rehabilitation counselors have resigned from their employment for many reasons, including retirement and higher paying positions (Calkins, Lui, & Wood, 2000). This meant that in the course of their rehabilitation, consumers may have received services from more than one counselor who may or may not have met the qualified rehabilitation counselor criteria and/or agreed with the planned services made with the consumer with their previous counselor. The continuity of case management activities related to continuous consumer contact rather than an inordinate gap in contacts. Britten (1981) pointed out that a counselor’s effectiveness was measured by continuity of case management activities. Therefore,
there may have been a problem with effectiveness when there were major gaps in services once a counselor left and a new counselor was hired. There was limited information available regarding the effect on consumer outcomes when, due to counselor turnover, consumers had been assigned more than one counselor during their rehabilitation.

Vocational rehabilitation counselors have many tasks to accomplish with their consumers such as determining the number of disability related impairments that will be circumvented, corrected or ameliorated under their Individual Plan for Employment (IPE). Additionally, counselors and consumers determined whether the consumer met the agency’s Order of Selection criteria for most significant disabilities/significant disabilities with multiple disability related impairments. Consumers’ employment may have been negatively impacted, if these tasks were not completed in an appropriate length of time. The law, under the Rehabilitation Act of 1998, required that rehabilitation counselors determine eligibility within 60-days of the date of application (Jenkins, Patterson, & Szymanski, 1998). Obviously, there may have been a problem both in terms of the law and the consumer having been informed of their eligibility decision, if their counselor left sometime during the 60-days before a decision was made.

Several studies have been conducted regarding counselor qualifications and its relationship to outcomes (Szymanski & Danek, 1992; Szymanski, 1991). Counselor qualification factors that correlate to successful or unsuccessful closures have been examined.
Significance of the Study

Harrison and Lee (1979) stated that “Research is still needed, however, to determine the relationship between specific competencies of rehabilitation counselors and specific outcomes of clients” (p. 141). This study investigated the relationship of qualified rehabilitation counselors, the number of counselors a consumer had during rehabilitation services, the number of disability related impairments, and the length of case management activities with outcome (successful closure or unsuccessful closure).

This study reviewed rehabilitation counselor personnel records to determine their competencies such as level of education, Certified Rehabilitation Counselor, length of employment in years, and assignment of specialty/general caseload. The assumption was that the more qualified counselor was one who had a higher level of education, was a Certified Rehabilitation Counselor, was considered a journeyman counselor, and was assigned a specialty caseload. For example, counselors who brought a high level of qualifications as described above may have produced more successful rehabilitation outcomes. Consumers on the other hand, who had the most number of disability related impairments and had the most significant/significant disability to employment, may have had a greater length of case management activities and, consequently, more than one counselor who served them resulting in unsuccessful outcomes. The combinations of counselor and consumer factors were unknown. This study investigated specific consumer and counselor factors related to outcome (successful closure or unsuccessful closure). These issues were addressed by four research questions.
Research Questions

This study was designed to investigate the following research questions:

1. Is there a relationship between the number of disability related impairment(s) and successful or unsuccessful vocational rehabilitation closures?

2. Is there a relationship between the length of case management activities in days and successful or unsuccessful vocational rehabilitation closures?

3. Is there a relationship between the number of counselors who served an individual consumer and successful or unsuccessful vocational rehabilitation closures?

4. Is there a relationship between counselor qualifications (including level of education, Certified Rehabilitation Counselor, the length of employment in years, and assignment as general/specialty caseload) and successful or unsuccessful vocational rehabilitation closures?

Definition of Terms

To avoid a possible misunderstanding or misinterpretation, the following definitions were used in this study.

- **Consumer**: An eligible individual with a documented disability who had received state public vocational rehabilitation services with the goal of obtaining employment.

- **Consumers with the Most Significant Disabilities and Significant Disabilities**: The Arizona Rehabilitation Services Administration Order of Selection definition related to significance of the number of services required to correct, ameliorate or circumvent the disability related impairments that resulted from the disability/disabilities. Consumers with the most significant disabilities were considered level one for highest
priority for services. Consumers with significant disabilities were considered level two for the second highest priority for services.

- Consumer database case: An Arizona Rehabilitation Services Administration database that contained consumer numbers, consumer demographic information, case status dates from referral to closure, number of disability related impairments, rehabilitation outcome, case expenditures, et cetera.

- Field Office: A state office that had vocational rehabilitation counselors dedicated to providing services with the goal of an employment outcome. Vocational rehabilitation counselors may also have been assigned a specialty caseload, such as consumers with traumatic brain injury, blindness/visual impairment, etc..

- Individual Plan for Employment (IPE): A plan that was developed by the state public vocational rehabilitation counselor and their eligible consumer. The plan had a detailed outline of goods and services, timelines, responsibilities, resources, and evaluation to meet the objectives and reach the goal of competitive employment. The signed plan made it the responsibility of the state and the consumer to follow through with the agreement.

- Successful Outcome: The vocational rehabilitation services outcome for a consumer who had received the necessary goods and services under the Individual Plan for Employment and became competitively employed for at least 90 days. In vocational rehabilitation, a successful outcome was indicated by a Status 26 closure.

- Unsuccessful Outcome: The vocational rehabilitation services outcome for a consumer who had an Individual Plan for Employment and who had received services
but due to intervening factors did not complete the Plan. In vocational rehabilitation, an unsuccessful outcome was indicated by a Status 28 closure.

- **Vocational Rehabilitation Counselor:** A counselor who had been specifically trained to serve persons with disabilities by providing vocational rehabilitation counseling and case management activities with the goal of a successful employment outcome.

- **Qualified Rehabilitation Counselor:** A vocational rehabilitation counselor who had met the federal Comprehensive System of Personnel Development requirement by having a masters degree in rehabilitation counseling or a closely related field, and who possessed a certification as a Certified Rehabilitation Counselor (CRC) (25th Institute on Rehabilitation Issues, 1999).

**Research Limitations**

In quantitative research, threats to internal and external validity, reliability and generalizations are addressed as research limitations. The first limitation to internal validity in this study was the reliance on archival data, which means that the dependent variable outcome (successful or unsuccessful closures) cannot be manipulated to determine if the predictor variables (number disability related impairments, length of case management activities, number of counselors who served an individual consumer, and counselor qualifications) have a relationship to the dependent variable. The second limitation to internal validity was the investigator’s working assumption that vocational rehabilitation counselors accurately coded data into the state case management computer system; the degree of accuracy could not be verified. The third limitation to external validity was that the investigator used a database for only a one-year period from one
state vocational rehabilitation agency. Thus, it was difficult to generalize the results of this study to other time frames and other state agencies or even other time frames within the same agency.
Chapter 2
REVIEW OF THE LITERATURE

Introduction

The field of vocational rehabilitation began with the provision of services to returning World War I veterans with disabilities (Jenkins, 1981). The Smith-Fess Act of 1920 established the state-federal program that began services to civilians with disabilities (Roessler & Rubin, 1982; Jenkins, 1981). The rehabilitation counseling field grew throughout the years, as the needs of citizens with disabilities were addressed locally. Bellini and Rumrill (2002a) stated that “Rehabilitation counseling is a relatively young field that developed in response to social needs associated with war and industrialization” (p. 126).

Since the onset of vocational rehabilitation, researchers have continued to apply empirical research with the goal of determining methods to improve the quality of life for individuals with disabilities by adding to the body of knowledge. For example, Bellini and Rumrill (2002b) suggested that rehabilitation counseling research had impacted policies that had improved rehabilitation education, training, case management activities, service delivery, program evaluation, counselor certification, and accreditation in rehabilitation counseling. Recently there have been discussions regarding proactive change management in rehabilitation administration to deal with scarcity of resources, advancing technology, vocal constituents, and changing consumer demography (Crimando, Riggar, & Bordieri, 1988).
To demonstrate that research has been conducted to improve the quality of life for individuals with disabilities, a literature review examined consumers with the most significant or significant disabilities, disability related impairments, length of case management activities, the roles and functions of vocational rehabilitation counselors, vocational rehabilitation counselor qualifications, counselor continuity, attrition of qualified vocational rehabilitation counselors, and retirement of public vocational rehabilitation personnel.

Consumers with the Most Significant or Significant Disabilities

The 1992 Rehabilitation Act amendments required that state vocational rehabilitation agencies implement an order of selection to ensure that individuals with the most severe disabilities will be given priority for services (Schriner, 1996). Schriner noted that the General Accounting Office in 1991 found that half of the state vocational rehabilitation agencies had never implemented an order of selection in their state. The Rehabilitation Act of 1992, 29 U. S. C. A. section 706 (15) (A) (Schriner, 1996), defined a person with a severe disability as one:

1. who has a severe physical or mental impairment that seriously limits one or more functional capacities, such as mobility, communication, self-care, self-direction, interpersonal skills, work tolerance, or work skills in terms of an employment outcome;
2. whose vocational rehabilitation can be expected to require multiple vocational rehabilitation services over an extended period of time; and
3. who has one or more physical or mental disabilities...or any other disability or disabilities that cause comparable functional limitations (p. 39).

The definition of a person with a severe disability in the Rehabilitation Act has been used by state and tribal vocational rehabilitation agencies when resources become tight. Therefore, researchers have conducted empirical studies to determine the relationship of
counselor education and years of experience with the vocational rehabilitation outcomes of persons with severe disabilities.

Mullins, Roessler, Schriner, Brown, and Bellini’s (1997) qualitative study of 11 exemplary vocational rehabilitation counselors in Arkansas noted that counselors believed in the legislative mandate to serve people with significant disabilities. These counselors noted that their successful outcomes were related to the consumer’s commitment to the work role and optimism about successful resumption of work.

Szymanski (1991) conducted a study in Wisconsin of counselors level of education and years of work experience in rehabilitation counseling and its relationship to the outcomes of consumers with severe disabilities. Her results supported previous studies in Maryland (Szymanski & Danek, 1992) and New York (Szymanski & Parker, 1989b) that found that counselors with more formal education had higher numbers of successful outcomes for consumers with severe disabilities.

Cook and Bolton’s (1992) Arkansas study supported Szymanski and Parker (1989a, 1989b) in finding that for the first 12 years of a masters level rehabilitation counselor’s work, there was a higher rate of successful outcomes for consumers with severe disabilities than for counselors with a bachelor degree.

Disability Related Impairments

The relationship between the consumer’s disability related impairment(s) and medically diagnosable disability has been a point of discussion in the field of vocational rehabilitation. For instance, Porter (1981) reviewed rehabilitation-related literature and definitions used by public rehabilitation programs and noted that “disability is a medical
diagnosable fact, while a handicap is determined by the extent of functional limitations” (p. 114). The medical paradigm was no longer accepted by many people with disabilities who had a growing self-awareness as a group who are supportive of the independent living movement, consumerism, supported employment, and disability rights (Groomes & Olsheski, 2002).

One study showed a relationship between consumer functional limitations (i.e., disability related impairments) and their salaries at vocational rehabilitation closure (Bolton, Bellini, & Brookings, 2000). Another study found that state rehabilitation counselors in Arkansas rated applicants with physical disability and behavioral disability differently for employment potential (Bolton, Bellini, & Neath, 1996). They found that the counselors judged consumers with physical disabilities as having more functional limitations in mobility and physical condition with more employment potential. The consumers with behavioral disabilities were considered to have more functional limitations in adaptive behavior and cognition, with less employment potential.

Length of Case Management Activities

Case management in vocational rehabilitation referred to the individual consumer’s case file moving through the rehabilitation process towards achieving employment outcomes and included the management and coordination of all services (Cox, Connolly, & Flynn, 1981). Moving the case file through the rehabilitation process involved the counselor’s ability and skills in making decisions in a timely manner.

State vocational rehabilitation agencies utilized a case management system that involved caseload statuses for referral, application, eligibility for services, service
provision, ready for employment, and outcomes (successful or unsuccessful). Many state vocational rehabilitation agencies have streamlined their caseload statuses to reflect fewer statuses to expeditiously conduct casework activities (Feinberg, 1997).

The 1992 (P.L. 102-569) and 1993 (P.L. 103-73) amendment of the Rehabilitation Act of 1973 addressed consumer issues of a delay in determining eligibility for services. As the result, the law required vocational rehabilitation counselors to determine eligibility within 60-days of the date of application by using existing medical, psychological, and related evaluation materials (Jenkins, Patterson, & Szymanski, 1998). In addition to determining eligibility within 60-days, there was a presumption that individuals with disabilities could benefit from vocational rehabilitation services in terms of an employment outcome (Jenkins, Patterson, & Szymanski, 1998).

The Roles and Functions of Vocational Rehabilitation Counselors

The roles and functions of vocational rehabilitation counselors in public rehabilitation agencies were to meet the individualized needs of their consumers with the goal of employment. In a time-limited fashion, vocational rehabilitation counselors provide a variety of consumers’ disability, social, personal, psychological, vocational, and environmental issues, needs, concerns, and resources (Muthard & Salomone, 1969).

Muthard and Salomone (1978a) indicated that the immediate future of rehabilitation counselors would involve “(a) the reordering of national priorities and goals, (b) the impact of the current manpower shortage on rehabilitation services and present steps to alleviate this insufficiency and (c) the trend towards greater accountability of counselors and agencies” (p. 31). They also mentioned the need to
prepare rehabilitation counselors for graduate-level training to increase their counselor skills.

Harrison and Lee’s (1979) Michigan study reviewed Muthard and Salomone’s Rehabilitation Counselor Competency Task Inventory (1969) to determine the relevance of rehabilitation counseling competencies for a master’s degree rehabilitation counseling curriculum. Their respondents included rehabilitation counselors with at least one year of experience as a rehabilitation counselor. The respondents rated counseling process as the most important competency area, followed by human behavior, and then case management.

Muthard and Salomone (1969, 1978b) reported that affective counseling, vocational counseling, placement duties, and a combination of supervising, teaching, and group procedure tasks were rated by 378 state and private rehabilitation counselors as having a high degree of importance in their job task inventory (out of 119 activities). Emener and Rubin’s 1980 study found that the most common job tasks of rehabilitation counselors were affective counseling, vocational counseling, and case service coordination. Mullins and Roessler’s (1998) qualitative study involved 11 experienced rehabilitation counselors who evaluated 31 counseling tasks that led to successful employment outcomes. They identified therapeutic service, service planning and evaluation, and job placement tasks as essential functions of rehabilitation counselors.

Jacques (1972) indicated that rehabilitation personnel brought different backgrounds, experiences, and training levels in providing the services that consumers require. She further elaborated the types of job titles that were given for those personnel,
such as rehabilitation assistant, aide, technician, paraprofessional, nonprofessional, and Indigenous counselor.

Vocational Rehabilitation Counselor Qualifications

In 1981, Brubaker noted that rehabilitation counseling was a marginal and emerging profession with an unclear knowledge base and varying education levels. Brubaker’s study led to a national attempt to establish a knowledge base for the rehabilitation counseling field with a requirement for education levels. A 1987 study conducted by Wright, Leahy, and Riedesel found that there was a value and a need to train rehabilitation counselors to achieve a masters degree. In Arkansas, Cook and Bolton (1992) replicated the Szymanski and Parker (1989a, 1989b) study with rehabilitation counselors (in New York, Maryland, and Wisconsin vocational rehabilitation agencies) on the relationship of counselor education and work experience with successful client outcomes.

Thus, many studies were conducted prior to the establishment of the Comprehensive System of Personnel Development (CSPD) requirements in 1998. The studies examined the relationship between counselor qualifications and successful outcomes, including perceptions of trained and untrained counselors of counseling and vocational planning (Smits, Wright, & Butler, 1968). One of the studies demonstrated that a qualified rehabilitation counselor with a masters degree in rehabilitation counseling served consumers with severe disabilities more competently than counselors with less than a bachelors degree, with a bachelors or masters degree unrelated to rehabilitation, or with less than 10 years work experience (Szymanski, 1991).
The Comprehensive System of Personnel Development (CSPD) requirements have established minimum standards for rehabilitation counselor knowledge base and education level. The 1998 Rehabilitation Act (P.L. 105-220) included the Comprehensive System of Personnel Development (CSPD) and required states to submit a plan to address meeting the standards. To be considered “qualified,” a counselor must possess a certification as a Certified Rehabilitation Counselor and a masters degree in rehabilitation counseling or a closely related masters degree (25th Institute on Rehabilitation Issues, 1999). Thus, the Comprehensive System of Personnel Development (CSPD) requirements provided for existing personnel in state and federal vocational rehabilitation programs to participate in professional development and preservice training to increase their knowledge of rehabilitation counseling and become a qualified counselor.

The 25th Institute on Rehabilitation Issues (1999) discussed the 1998–1999 informal survey of 50 state vocational rehabilitation programs by the Council of State Administrators of Vocational Rehabilitation (CSAVR). The survey revealed that there were 8,037 counselors employed and that 3,414 (42%) of those counselors did not meet the Comprehensive System of Personnel Development (CSPD) requirements. The survey confirmed the need for state vocational rehabilitation agencies to work in partnership with rehabilitation counselor education programs to meet the Comprehensive System of Personnel Development (CSPD) requirements for rehabilitation counselors.

In Arizona, the graduate and undergraduate rehabilitation counselor education program at the University of Arizona and the state vocational rehabilitation program
formed a working partnership to address the Comprehensive System of Personnel Development (CSPD) requirements. Under this working partnership, counselors were able to do a work-study model that allowed rehabilitation counselors to maintain their caseloads on the job while pursuing further education and training, resulting in cost effectiveness for the state agency (Sales & McAllan, 1999; McAllan & Sales, 2000).

Counselor Continuity

Review of the empirical literature on counselor retention issues revealed that the twenty-first century had many challenges for the public vocational rehabilitation program. The challenges included the retirement of experienced personnel and the attrition of qualified staff seeking employment with the private sector or another state vocational rehabilitation agency with a higher salary and better benefits (25th Institute on Rehabilitation Issues, 1999). Barrett, Riggar, Flowers, Crimando, and Bailey (1997) noted that job dissatisfaction, excessive paperwork, and unfeeling bureaucracies contributed to personnel turnover. Because there were high rates of counselor turnover or transfer, Britten (1981) recommended that counselors’ case records document significant points in the case and justify the course of action taken as a basis for reevaluating the consumer for services at a future time by a different counselor. Barrett et al. (1997) mentioned that disruptions in client programming due to counselor turnover and the resulting base cost to rehabilitation agencies, facilities, and organizations of replacing a rehabilitation counselor averaged $165,000 per year; it is expected that the average organization’s replacement cost has quadrupled since 1997. To determine the actual cost to the rehabilitation agencies, facilities, and organizations, the authors used data from a
variety of studies, adjusted for a decade of inflation (consumer index report) and the cost of personnel turnover.

Riggar, Hansen, and Crimando (1987) found that a majority of the employees who left the rehabilitation agencies had a masters degree (53.4%), were rehabilitation counselors (62%), and had worked at least two years or more within the job position from which they withdrew (81%). They cited several reasons for the personnel attrition, including little advancement potential, little job satisfaction, stress or burnout, and personality differences.

The following statement was made by Fred “Skip” Bingham, administrator of Arizona Rehabilitation Services Administration, where this study was conducted:

The Arizona public vocational rehabilitation program conveyed concern about its …staff turnover and increased demands on its resources. Good people/good workers found it necessary to leave our ranks in order to adequately support their families. They found the work of the Vocational Rehabilitation Program internally rewarding, but the compensation less than sufficient. As the program increased its need for qualified staff and continued to push for higher academic standards the vacancy rates soared. The looming crisis was of such proportion that the program freely admitted that in order to move to the next level or even maintain our current effectiveness we must address the salary needs of our workforce (Bingham, 2000, p. 16).

Attrition of Qualified Vocational Rehabilitation Counselors

After years of committing resources, the public vocational rehabilitation programs were finding the attrition of qualified rehabilitation counselors a challenge (25th Institute on Rehabilitation Issues, 1999).

Garske (2000) speculated that what Ohio vocational rehabilitation counselors most liked about their jobs fell into the category of motivation factors developed by
Herzberg, Mauser, and Snyderman (1959), i.e., achievement, recognition, work itself, responsibility, and advancement opportunities. What the counselors liked least about their job was dealing with bureaucracies, regulations, red tape and excessive amounts of paperwork.

Attrition of qualified vocational rehabilitation counselors also related to personnel problems, such as the burnout factor, employee job dissatisfaction, employee withdrawal behavior, work overload, and a sense of not belonging to the work culture (Riggar, Flowers, & Crimando, 2002; Cranswick, 1997; Gomez & Michaelis, 1995). In addition, attrition may be related to few advancement opportunities, high stress, bureaucratic “red tape,” excessive amounts of paperwork, funding problems, personality differences with supervisors or management staff, and role strain (Crimando, Riggar, & Bernard, 2002; Garske, 1999; Trolley & Cervoni, 1999). These studies allude to reasons for counselor turnover that have an impact on consumer experience of the counseling process; if counselors are not satisfied with their jobs, their consumers may be negatively impacted.

In relation to the issue of vocational rehabilitation counselor attrition, Koch and Rumrill (1997) discussed the rapidly changing employment patterns of vocational rehabilitation counselors in nontraditional employment settings. Employers from nontraditional employment settings recognized the abilities represented by of the multifaceted roles and functions of the rehabilitation counselors that are transferable to various other employment settings, i.e., mental health, substance abuse counseling, geriatric rehabilitation, medical/allied health case management, employee assistance programs, and disability management. This was supported by investigators who did a
study in Florida on rehabilitation counseling students’ career goal aspirations, which included mental health counselor, addictions counselor, and private rehabilitation counselor (Dixon, Emener, Kelley, & Wright, 1999).

Kampfe, Mitchell, Boyless, and Sauers (1999) indicated that “stress among service professionals may begin during the undergraduate internship” (p. 359). Cranswick (1997) found that younger rehabilitation workers in Canada had higher levels of emotional exhaustion than older workers from excessive consumer demands and work overload. This study confirmed that coping strategies, if taught to undergraduate students studying to become vocational rehabilitation counselors, may help them prepare for their future profession, case management, and life stressors.

Leadership style may also play a role in counselor attrition. Packard and Kauppi (1999) found that supervisors who had democratic styles tended to have subordinates who were satisfied with their jobs because their supervisors provided a relationship orientation that promoted a supportive environment and clarity of job tasks.

The consequence of qualified vocational rehabilitation counselor attrition on consumer outcomes was unknown, but alluded to in a study conducted by Riggar, Hansen, and Crimando (1987). Riggar, et al. did not indicate if their respondents met the criteria of qualified rehabilitation counselors with a masters degree. They found that the rehabilitation counselors’ departure/withdrawal could have deleterious effects on the agencies, consumers, and remaining staff. However, they noted that some of the rehabilitation counselors’ who departed/withdrew from the profession may have been incompetent.
Retirement of Public Vocational Rehabilitation Personnel

The supply of, and need for, qualified rehabilitation counselors was a concern (Kelley, Dixon, Emener, & Wright, 1999). The retirement and attrition of personnel heightened the importance of replacing retirees and personnel turnover with new graduates from rehabilitation counselor education programs. Many states have faced the retirement of aging “baby boomers” and many more will be retiring within the next five years.

The 25th Institute on Rehabilitation Issues (1999) discussed the high rate of retirement of state vocational rehabilitation counselors and the need to address the national issue of succession planning. Under the guidance of a mentor, succession planning included employee capacity building and delegation of management and administrative responsibilities.
Chapter 3

METHODOLOGY

This researcher investigated the relationship between the consumer outcome (successful closure or unsuccessful closure) with the following factors: (1) the number of disability related impairments, (2) length of case management in days from Status 10 (consumer found eligible for services) to Status 13 (Individual Plan for Employment implemented) to closure Statuses 26 or 28, (3) number of counselors who served an individual consumer, and (4) counselor qualifications of those who served the consumers with the most significant or significant disabilities.

Research Design

The researcher assessed factors related to closure which had two levels, successful or unsuccessful. An analysis of variance (ANOVA) was applied to identify what factors may have prediction validity for successful or unsuccessful closures.

Dependent and Predictor Variables

The dependent variable had two nominal outcome values: (1) Status 26 (successful closures) and (2) Status 28 (unsuccessful closures).

The following predictor variables included were:

(1) The Number of Disability Related Impairments: 01, 02, 03, 04, 05, 06, 07

Disability related impairments may have included: Communication, Interpersonal Skills, Mobility, Self-care and Home care, Self-direction, Work skills, or Work Tolerance.
(2) Length of Case Management activities in days: Status 10 (consumer found eligible for services) to Status 13 (Individual Plan for Employment Implemented) and Status 13 to Closure (Status 26 or Status 28).

(3) Number of Counselors a consumer had: One counselor, Two counselors, Three counselor, Four or Five counselors.

Note: The following information from 4a through 4d was used in determining counselor qualifications based upon the asterisk numbers provided below and human resources data gathered on counselor education, CRC status, length of employment and caseload assignment.

(4a*) Counselor Level of Education: 1) Associate degree, certificate, other or high school diploma, 2) Bachelors degree in rehabilitation, related and non-related majors, 3) Masters degree in rehabilitation counseling, related and unrelated majors.

(4b*) Certified Rehabilitation Counselor (CRC) status: 1) No or 2) Yes.

(4c*) Counselor length of employment: 1) 1-5 years, 2) 6-15 years or 3) 16 years plus.

(4d*) Counselor General/Specialty Caseload Assignment: 1) General, Arizona State University, School to Work transition, Jobs, Youth Transition Program and Employment Support Services, 2) Traumatic Brain Injury, Industrial Commission of Arizona and Severely Mentally Ill, or 3) Program Representative, Blind/Visually Impaired, Deaf/Hearing Impaired and Rehabilitation Counselor for the Deaf.

Data Collection and Procedures

The researcher submitted an application for use of the Arizona Rehabilitation Service Administration data. The application was approved. A copy of the approved
application was sent to the University of Arizona Institutional Review Board. See approved University of Arizona Institutional Review Board letter in Appendix A. The Institutional Review Board recommended that the researcher not receive any counselor identification. As a result of this recommendation, Arizona Rehabilitation Services Administration assigned a unique number for each counselor who served the randomly selected cases. Confidentiality was maintained at all levels throughout the research project.

The consumer database had 40 files with hundreds of data elements. The files included demographics, the number of disability related impairments, and case load statuses (dates entered and dates ended). The information was examined to determine the consumer’s number of disability related impairments and length of case management activities in days.

Research Population and Sample

After receiving the Arizona Rehabilitation Services Administration consumer database cases for the time period March 1, 2002 through February 28, 2003, a stratified random sample was conducted by using the Statistical Program for the Social Sciences (SPSS). There were 4,217 total consumers with successful closures (Status 26) and unsuccessful closures (Status 28). The first strata was successful closures (Status 26) and unsuccessful closures (Status 28). The second strata was level 1 (consumers who met the Arizona Rehabilitation Services Administration Order of Selection with the most significant disabilities) and level 2 (consumers who met the Arizona Rehabilitation Services Administration Order of Selection with significant disabilities). Level 3 was not
included in the stratified random selection (consumers who did not have a significant
disability). Upon completion of the stratified random sample, the sample universe for the
two strata totaled 3,359. The N provided a useful predictor power of 120 for successful
closures and 120 for unsuccessful closures since the two predictor variables (number of
counselors and counselor qualifications) may have resulted in a separation that would be
difficult to correlate with the other two predictor variables (number of consumer
disability related impairments and length of case management). The sample fraction of
240 consumers divided by 3,359 = 7%.

Data Collection Instrument

There were three data sources from Arizona Rehabilitation Services
Administration (RSA): (1) consumer database, (2) supervisors for information regarding
the number of counselors that served the consumer(s) and (3) human resource records for
information regarding counselor qualifications and specialty caseload assignments.

Since the consumer database did not contain the number of vocational counselors
a consumer had or counselor qualifications, two questionnaires were developed. One
questionnaire was to be completed by the supervisors and one to be completed by the
human resources staff. A “Vocational Rehabilitation Supervisor Questionnaire” was
developed for vocational rehabilitation supervisors to complete and send to the researcher
(see Appendix B). Prior to sending the questionnaire, it was field tested and modified as
needed. The purpose of the questionnaire was to provide the number of counselors that a
consumer had during the vocational rehabilitation process. This information could only
be obtained from the supervisors who reviewed the consumer case file as this information was not reported in the consumer database.

A “Vocational Rehabilitation Supervisor Questionnaire” was sent to 38 supervisors whose counselors had served the 240 consumers who were randomly selected with the most significant/significant disabilities in Status 26 and Status 28. The questionnaire was completed by 31 of these 38 supervisors resulting in 171 counselors who had served 215 consumers. Thus, the sample included 215 consumers with the most significant/significant disabilities who were closed from the Arizona Rehabilitation Services Administration from March 1, 2002 through February 28, 2003. The second sample included 171 vocational rehabilitation counselors who had closed 215 consumers with the most significant/significant disabilities.

The human resource office was contacted for information regarding the qualifications of the 171 counselors who were assigned to serve the 215 consumers. The information included level of education, Certified Rehabilitation Counselor status, number of years employed with the state agency and assignment as general/specialty caseload. The human resource office then gathered the necessary data from personnel records. See Counselor Qualifications form in Appendix C.

Statistical Analysis

The Statistical Program for the Social Sciences (SPSS) and Excel™ was chosen for the data analyses. The quantitative data obtained from the Arizona Rehabilitation Services Administration database was statistically analyzed by using an analysis of variance (ANOVA) to determine if there were any relationships between the predictor
variables and the outcome variable. The outcome variable was closure which had two levels: successful or unsuccessful closures. Consumer variables were aggregated by counselor number(s) and the descriptive statistics were computed for demographic information on consumers and counselors. Vocational rehabilitation counselor data were aggregated by counselor number(s) and correlated with outcomes. An alpha level of .05 was selected for all statistical tests.
Chapter 4

RESULTS

There were 215 consumers randomly selected and 133 (62%) were males and 82 (38%) were females. The median age was 34. The ages ranged from 15 to 78. Most applicants were 17 (14%), 18 (6%), and 16 (5%) years of age. A majority of the consumers were White (81%) and the primary language was English (92%). Over half of the consumers reported their marital status as Never Married (55%). The highest percent (33%) of education at application was High School Graduate/General Equivalency Diploma. The two highest percentages for primary disabilities were cognitive impairments (30%) and psychosocial impairments (26%). See Appendix D for primary disability.

There were 171 rehabilitation counselors who provided services to 215 consumers. There were 96 (55%) female counselors, 74 (44%) male counselors and one (1%) counselor for whom information on gender was missing. There were 75 counselors with bachelors degree in non-related majors. There were 117 Certified Rehabilitation Counselors; 63 were female and 54 were male.

Testing the Research Questions

The research questions were examined using the Arizona Rehabilitation Services Administration’s consumer database for the time period March 1, 2002 through February 28, 2003.

Research Question 1: Is there a relationship between the number of disability related impairment(s) and successful or unsuccessful vocational rehabilitation closures?
The number of disability related impairment(s) impacted the consumer employment potential. The rehabilitation counselor and consumer determined what impairments need to be circumvented, corrected or ameliorated during the rehabilitation process. Some of the disability related impairments that consumers may have had included: Communication, Interpersonal Skills, Mobility, Self-Care and Home Care, Self-Direction, Work Skills, and Work Tolerance.

The analysis revealed that the number of consumer disability related impairments ranged from a total of two (26%), three (23%) and four (18%). Nearly 30% of the successful closures reported two consumer disability related impairments. For unsuccessful closures, 26% reported three consumer disability related impairments. One consumer was closed unsuccessfully with seven disability related impairments.

An analysis of variance (ANOVA) supported the null hypothesis that the number of consumer disability related impairments by closure statuses was independent, F(1,212)=1.872, p=.173. The results suggested a greater number of disability related impairments for those consumers closed unsuccessful than successful, but the difference was not significant. Table 1 shows the difference of the means for successful closure and unsuccessful closure with the number of disability related impairments.
Table 1

*Number of disability related impairments by closure status*

<table>
<thead>
<tr>
<th>Closure</th>
<th>*N</th>
<th>Mean</th>
<th>Deviation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>110</td>
<td>2.67</td>
<td>1.40</td>
<td>0.</td>
<td>6.</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>104</td>
<td>2.94</td>
<td>1.48</td>
<td>0.</td>
<td>7.</td>
</tr>
<tr>
<td>Total</td>
<td>214</td>
<td>2.80</td>
<td>1.44</td>
<td>0.</td>
<td>7.</td>
</tr>
</tbody>
</table>

*Missing data for one case.

Research Question 2: Is there a relationship between the length of case management activities in days and successful or unsuccessful vocational rehabilitation closures?

Table 2 provided descriptive statistics from Status 10 (consumer found eligible for services) to Status 13 (Individual Plan for Employment implemented) and from Status 13 to closure status. Status 10 to Status 13 took an average of 143.35 days. An analysis of variance (ANOVA) revealed that the null hypothesis on the length of case management in days from Status 10 to Status 13 was independent and was supported, $F(1,214)=1.19, p=.176$.

The mean for the Length of Case Management from Status 13 to Status 28 (unsuccessful closure), on average, was longer at 529.44 days than from Status 13 to Status 26 (successful closures) at 433.51 days. Of the 111 consumers closed rehabilitated in Status 26, 76 had less than 90 days in case management activities. Sixty-five consumers were closed unsuccessful in Status 28 and also had less than 90 days in case
management activities. An analysis of variance (ANOVA) revealed that the null hypothesis for the length of case management from Status 13 to Status 26 or to Status 28 was independent and supported, \( F(1,214)=.48, p=.72. \)

Table 2

<table>
<thead>
<tr>
<th>Number of Days</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days from Status 10 to Status 13</td>
<td>143.35</td>
<td>273.09</td>
<td>0</td>
<td>1571.</td>
</tr>
<tr>
<td>Days from Status 13 to Status 26</td>
<td>433.51</td>
<td>395.12</td>
<td>93</td>
<td>2541.</td>
</tr>
<tr>
<td>Days from Status 13 to Status 28</td>
<td>529.44</td>
<td>432.96</td>
<td>0</td>
<td>2681.</td>
</tr>
</tbody>
</table>

Research Question Three: Is there a relationship between the number of counselors who served an individual consumer and successful or unsuccessful vocational rehabilitation closures?

The results indicated that most consumers had only one counselor (68%), followed by two counselors (19%), three counselors (9%), four counselors (2%) and five counselors (2%). The descriptive analysis revealed that both successful closures and unsuccessful closures had almost the same number of counselors (1.50 versus 1.48). The
null hypothesis was that the number of counselors by closure statuses was independent. The effect of the number of counselors that a consumer had was not statistically significant, F(1,212)=.027, \( p = .869 \). Therefore it made no difference, in terms of outcome, if consumers had one counselor or more than one counselor during their rehabilitation services. See Table 3.

Table 3

*Number of counselors by closure status*

<table>
<thead>
<tr>
<th>Closure</th>
<th>*N</th>
<th>Mean</th>
<th>Deviation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>110</td>
<td>1.50</td>
<td>.938</td>
<td>1.</td>
<td>5.</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>104</td>
<td>1.48</td>
<td>.767</td>
<td>1.</td>
<td>5.</td>
</tr>
<tr>
<td>Total</td>
<td>214</td>
<td>1.49</td>
<td>.855</td>
<td>1.</td>
<td>5.</td>
</tr>
</tbody>
</table>

*Missing data for one case.

Research Question Four: Is there a relationship between counselor qualifications (including level of education, Certified Rehabilitation Counselor, the length of employment in years, and assignment as general/specialty caseload) and successful or unsuccessful vocational rehabilitation closures?

See page 33 (4a) (4b) (4c) of this dissertation on how counselor qualification scores were derived. Based upon the information on page 33, counselor qualification scores are found in Appendix E. Table 4 shows that an analysis of variance (ANOVA)
supported the null hypothesis that the means are equal for the counselor qualification score for level of education, CRC status and length of employment by closure status, F(1,212)=.004, p=.947. Therefore, counselor qualifications had no relationship to outcome.

Table 4

Counselor qualifications by closure status

<table>
<thead>
<tr>
<th>Closure</th>
<th>*N</th>
<th>Mean</th>
<th>Deviation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>110</td>
<td>6.7635</td>
<td>1.2081</td>
<td>5.</td>
<td>10.</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>104</td>
<td>6.7518</td>
<td>1.3379</td>
<td>4.</td>
<td>10.</td>
</tr>
<tr>
<td>Total</td>
<td>214</td>
<td>6.7578</td>
<td>1.2699</td>
<td>4.</td>
<td>10.</td>
</tr>
</tbody>
</table>

*Missing data for one case.

Counselor Level of Education.

The results indicated that a higher percent of the counselors had a *bachelors degree in non-related majors* (44%), followed by a *masters degree in rehabilitation counseling* (20%) and a *masters degree in related major* (i.e., *counseling and guidance*) (18%). Seven percent of the counselors had a *masters degree in unrelated majors* (i.e., *business, education*) and 4% of the counselors had a bachelors degree in *rehabilitation and related majors*. 
The mean for successful closure was 3.5497 and for unsuccessful 3.3827 (see Table 5). An analysis of variance (ANOVA) for counselor level of education revealed that the null hypothesis by closure status was independent and was supported, F(1,212)=.439, p=.509. This means the level of counselor education (whether they have a high school degree or a master degree) had no relationship to the outcome.

Table 5

* Counselor level of education by closure status

<table>
<thead>
<tr>
<th>Closure</th>
<th>*N</th>
<th>Mean</th>
<th>Deviation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>110</td>
<td>3.5497</td>
<td>1.8755</td>
<td>1.</td>
<td>8.</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>104</td>
<td>3.3827</td>
<td>1.8097</td>
<td>1.</td>
<td>8.</td>
</tr>
<tr>
<td>Total</td>
<td>214</td>
<td>3.4685</td>
<td>1.8414</td>
<td>1.</td>
<td>8.</td>
</tr>
</tbody>
</table>

* One case missing.

Certified Rehabilitation Counselor (CRC) Status

There were 117 rehabilitation counselors who were Certified Rehabilitation Counselors (CRCs) and 50 were not CRCs. There were four counselors with unknown CRC status. The counselors’ CRC mean for successful closure was 1.6323 and for unsuccessful closure was 1.6207. A test of the null hypothesis revealed that counselors’ with CRC mean by closure was not statistically significant, F(1,211)=.034, p=.854.
There was no relationship between a counselor who had a CRC or didn’t have a CRC with regard to closure. Table 6 shows the means for CRC status by closure.

Table 6

*Certified Rehabilitation Counselor status by closure status*

<table>
<thead>
<tr>
<th>Closure</th>
<th>*N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>110</td>
<td>1.6323</td>
<td>.4513</td>
<td>1.</td>
<td>2.</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>103</td>
<td>1.6207</td>
<td>.4604</td>
<td>1.</td>
<td>2.</td>
</tr>
<tr>
<td>Total</td>
<td>213</td>
<td>1.6367</td>
<td>.4547</td>
<td>1.</td>
<td>2.</td>
</tr>
</tbody>
</table>

*Missing data for one case.

Counselor Length of Employment

Table 7 shows counselor length of employment. The mean for successful closure was 8.2 years length of employment and unsuccessful closure was 8.0 years length of employment. An analysis of variance (ANOVA) did not support the null hypothesis that the length of employment by closure was independent and was supported, $F(1, 209)=.268, p=.605$. There was no relationship to the outcome due to the length of employment or years of experience that counselors had.
Table 7

*Counselor length of employment by closure status*

<table>
<thead>
<tr>
<th>Closure</th>
<th>*N</th>
<th>Mean</th>
<th>Deviation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>107</td>
<td>8.2</td>
<td>4.43</td>
<td>2.</td>
<td>19.</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>104</td>
<td>8.0</td>
<td>4.23</td>
<td>2.</td>
<td>22.</td>
</tr>
<tr>
<td>Total</td>
<td>211</td>
<td>8.1</td>
<td>4.32</td>
<td>2.</td>
<td>22.</td>
</tr>
</tbody>
</table>

* Note: Missing data for four cases.

Counselor General/Specialty Caseload

Appendix F shows the type of caseload assignment and the number of counselors assigned to the caseload. Forty two counselors were assigned a general caseload to serve consumers with disabilities within their service area. There were no counselor assignments for specialty caseload in *Jobs (welfare to work), Arizona State University*, and *Industrial Commission of Arizona*. An analysis of variance (ANOVA) was not conducted because there were 62 missing values on caseload assignment.
CHAPTER 5
SUMMARY, DISCUSSION AND RECOMMENDATIONS

In this chapter, a summary, discussion and recommendations were presented based upon the study. The results were examined in light of the research questions. Recommendations were suggested for future research.

Summary

To add to empirical knowledge, factors regarding the number of disability related impairments, length of case management, number of counselors a consumer had, and counselor qualifications were examined to determine if they had any relationship to outcome (successful closure or unsuccessful closure).

Purpose and Research Questions

The purpose of this study was to investigate selected factors that might be associated with vocational rehabilitation outcome (successful closure or unsuccessful closure).

1. Is there a relationship between the number of disability related impairment(s) and successful or unsuccessful vocational rehabilitation closures?
2. Is there a relationship between the length of case management activities in days and successful or unsuccessful vocational rehabilitation closures?
3. Is there a relationship between the number of counselors who served an individual consumer and successful or unsuccessful vocational rehabilitation closures?
4. Is there a relationship between counselor qualifications (including level of education, Certified Rehabilitation Counselor, the length of employment in years, and
assignment as general/specialty caseload) and successful or unsuccessful vocational rehabilitation closures?

Literature Review

The literature review included relevant publications in examining consumers with the most significant or significant disabilities, disability related impairments, length of case management activities, the roles and functions of vocational rehabilitation counselors, vocational rehabilitation counselor qualifications, counselor continuity, attrition of qualified vocational rehabilitation counselors, and retirement of public vocational rehabilitation personnel.

The Sample

The study sample consisted of 171 vocational rehabilitation counselors with Arizona Rehabilitation Services Administration and 215 most significantly/significantly disabled consumers. The vocational rehabilitation counselors served and closed the 215 consumers identified as either successful or unsuccessful from March 2002 through February 2003. A description on the definition of consumers with the most significant or significant disabilities is found on page 15.

The Procedure

A sample universe of 3,359 consumers in level one (most significant) and level two (significant) in Status 26 and in Status 28 resulted in a random selection for a sample of 300 for the time period of March 1, 2002 through February 28, 2003. After the random selection of consumer database cases, a “Vocational Rehabilitation Supervisor Questionnaire” was pilot tested. The questionnaire was then sent to 38 vocational
rehabilitation supervisors to complete by reviewing case files in their office. Upon the completion of the questionnaires from 31 supervisors out of 38, 171 counselors served the 215 consumers.

Statistical Treatment

An analyses of variance (ANOVA) of the research questions were completed to provide an overall description of the results of the relationship of outcome variable with predictor variables. The N used in the analysis did not always equal the total N because of missing data in the consumer and counselor database.

One dependent variable (outcome) with two levels (successful closure or unsuccessful closure) was selected to determine the relationship of the research questions using a one-way analysis of variance (ANOVA) to find the set of predictor variables related to each outcome variable. The predictor variables included: number of disability related impairments, length of case management in days, number of counselors, and counselor qualifications that had level of education, CRC status, length of employment, and assignment as general/specialty caseload. An alpha level of .05 was used for all statistical tests.

Results

Seven analysis of variance (ANOVA) means of predictor variables were calculated; all were not statistically significant at the .05 significance level. The research questions and statistical significance testing are summarized:

1. Is there a relationship between the number of disability related impairment(s) and successful or unsuccessful vocational rehabilitation closures?
Findings: Not statistically significant, $F(1, 212)=1.872$, $p=.173$.

2. Is there a relationship between the length of case management activities in days and successful or unsuccessful vocational rehabilitation closures?

Findings from Status 10 (consumer found eligible for services) to Status 13 (Individual Plan for Employment implemented): Not statistically significant, $F(1, 214)=1.19$, $p=.176$.

Findings from Status 13 to Status 26 (successfully closed) or to Status 28 (unsuccessful closed): Not statistically significant, $F(1, 214)=.48$, $p=.72$.

3. Is there a relationship between the number of counselors who served an individual consumer and successful or unsuccessful vocational rehabilitation closures?

Findings: Not statistically significant, $F(1, 212)=.027$, $p=.869$.

4. Is there a relationship between counselor qualifications (including level of education, Certified Rehabilitation Counselor, the length of employment in years, and assignment as general/specialty caseload) and successful or unsuccessful vocational rehabilitation closures?

The general/specialty caseload assignments had 62 missing values; therefore, an ANOVA was not calculated. Findings for counselor qualifications (including level of education, Certified Rehabilitation Counselor and length of employment): Not statistically significant, $F(1,212)=.004$, $p=.947$. Similar results were found for counselor level of education: $F(1,212)=.439$, $p=.509$, Certified Rehabilitation Counselor: $F(1,211)=.034$, $p=.854$, and length of employment: $F(1,209)=.268$, $p=.605$. 
Discussion

All of the individual variables were tested for significance with an analysis of variance (ANOVA). Each variable resulted in non-significance when compared with outcome (successful closure or unsuccessful closure).

Prior to receiving the Arizona Rehabilitation Services Administration consumer database for the time period March 1, 2002 through February 28, 2003, the state agency liaison noted that a new database had replaced the old one. The liaison and the researcher had previously planned on using the old database and relied on gathering counselor qualifications from experienced staff. Unfortunately, the experienced staff retired before the information could be gathered. The new database replaced “functional limitations” with “disability related impairments” to reflect the Order of Selection criteria. A new request was required for the human resource office to gather information on counselor qualifications information.

In relation to research question one, “Is there a relationship between the number of disability related impairment(s) and successful or unsuccessful vocational rehabilitation closures?” Findings showed that a majority of consumers had two disability related impairments. Most successful closures had two disability related impairments and unsuccessful closures had three consumer disability related impairments. However, the means for successful closures (2.67) and unsuccessful closures (2.94) were so close that the relationship was not statistically significant. The Arizona Rehabilitation Services Administration consumer database did not provide a specific coding for the types of disability related impairments, thus the types of
impairments associated with the outcomes were not available. In conclusion, the number of disability related impairments had no relationship in predicting outcome (successful closure or unsuccessful closure).

In relation to research question two, “Is there a relationship between the length of case management activities in days and successful or unsuccessful vocational rehabilitation closures?” From Status 10 (consumers found eligible) to Status 13 (Individual Plan for Employment Implemented), the mean was 143.35 days or five months for counselors to develop an Individual Plan for Employment (IPE). From Status 13 to closure, the length of case management, on average, was longer for unsuccessful closures (mean 529.44 days), than for successful closures (mean 433.51 days). It took rehabilitation counselors an average of one year and two months to provide services to consumers with the most significant/significant disabilities and close them successfully employed. Rehabilitation counselors spent on average one year and five months providing services to consumers whose cases were closed unsuccessful. In conclusion, it appeared that the length of case management had no relationship with predicting the outcome (successful closure or unsuccessful closure).

In relation to research question three, “Is there a relationship between the number of counselors who served an individual consumer and successful or unsuccessful vocational rehabilitation closures?” In this study, 146 (68%) consumers were provided services by one counselor. Only three consumers had five counselors (1%) that provided services during rehabilitation process. The mean for successful closure was 1.50 and unsuccessful closure was 1.48. Thus, there was no relationship between the number of
counselors who served an individual consumer and their outcome (successful closure or unsuccessful closure)

In relation to research question four, “Is there a relationship between counselor qualifications (including level of education, Certified Rehabilitation Counselor, the length of employment in years, and assignment as general/specialty caseload) and successful or unsuccessful vocational rehabilitation closures?” The literature indicated that the minimum qualifications of a masters degree and CRC are crucial to the delivery of adequate services to consumers with “severe disabilities” if successful closure is anticipated (Szymanski, 1991; Szymanski & Danek, 1992; Szymanski & Parker, 1989b). In this study, 43 rehabilitation counselors met the definition of “qualified rehabilitation counselor” because they had a masters degree in rehabilitation counseling with a Certified Rehabilitation Counselor designation as shown in Appendix E. As the additional factors were added (years of experience and specialty caseload), 69 rehabilitation counselors were deemed well qualified. Thus, 112 counselors were considered qualified to provide services to consumers with the most significant or significant disabilities that met the Arizona Rehabilitation Services Administration’s Order of Selection. The mean for successful closure was 6.7635 and unsuccessful closure was 6.7518. Thus, there was no relationship between counselor qualifications for level of education, Certified Rehabilitation Counselor, and length of employment with the outcome (successful closure or unsuccessful closure).

The rest of the specific qualification factors mean for successful closure and unsuccessful closure had no relationship between counselor qualifications and outcome.
The mean for successful closure for counselor level of education was 3.5497 and unsuccessful 3.3827; the mean for successful closure for Certified Rehabilitation Counselor was 1.6323 and unsuccessful 1.6207; and length of employment for successful closure was 8.2 and unsuccessful closure 8.0.

A majority of the rehabilitation counselors were not specialty counselors but had general caseloads. There were 62 missing values regarding reporting general/specialty caseload assignments. This prevented further analysis of general/specialty caseload assignments.

A demographic analysis of the consumers provided a brief overview during the study period of fiscal year 2003. The median age for successful closure was 36 and unsuccessful closure was 32 years. Thus, consumers that were closed successful were, on average, four years older than those closed unsuccessful.

Consumers in the age category of 40 (27%), 30 (21%) and teens (25%) were more likely to be closed successful. All of the consumers age 60 and over were closed successfully (7%). Only one 60 year old consumer required Employment Support Services in an integrated work setting (ESS). There were 65 teenagers that were served (the most age served). Consumers who were teenagers (36%) were more likely to be closed unsuccessfully, followed by those in their 40s (23%) and 30s (18%). A majority of the teenagers reported a disability of cognitive impairments (71%). The highest percent (38%) for age group 30s reported a disability of psychosocial impairments followed by age group 40s (26%). Thus, age and/or disability appeared to play a role in successful outcomes, particularly in groupings of teenagers and age groups 40, 30, 60,
and 70. For example, teenagers with cognitive impairments, by total numbers, were most often served by rehabilitation counselors within this study. Teenagers in this study were more likely to be closed unsuccessful and may have skewed the results of the research.

A consumer variable appeared to be related to successful outcomes. That is, the higher the education of the consumer at the time of application and with fewer number of days spent from Status 10 (consumer found eligible for services) to Status 13 (Individual Employment Plan implemented) the greater the likelihood of a successful closure. Consumers with successful closures had bachelors degree (86%) and a masters degree or higher (71%).

Recommendations

Although every effort was taken to ensure that sound methodology was employed, including consultation with the State agency personnel on their database and personnel records, there was a limitation associated with this study. For example, the external validity may have been a limitation as the researcher used Arizona Rehabilitation Services Administration consumer database cases only from the time period of March 1, 2002 through February 28, 2004.

A possible influence on this study could have been related to Arizona Rehabilitation Services Administration’s commitment to in-service and pre-service education of its counselors. New counselors were required to attend mandatory core vocational rehabilitation training. Additionally, ongoing continuing education was provided in specialty areas (i.e., mental health, traumatic brain injury, school-to-work transition) and not only from the Arizona Rehabilitation Services Administration training
staff, but also from the Rehabilitation Continuing Education Program, San Diego State University (J. Potyka, personal communication, March 23, 2005). Additionally, since 1992, the University of Arizona counselor education program has had a formal agreement with the Arizona Rehabilitation Services Administration to provide masters level education to their counselors. During the study period of March 1, 2002 through February 28, 2003, there were 30 full-time and 60 part-time masters level students who were counselors with the Arizona Rehabilitation Services Administration. The rehabilitation training and masters level counselor rehabilitation education may have contributed to no statistically significant findings for qualified rehabilitation counselors and other factors studied in this research, i.e., number of disability related impairment, length of case management, and number of counselors a consumer had.

Like similar studies related to vocational rehabilitation factors and counselor qualifications to consumer outcome, the use of a statistical power with an alpha level of .10 and a sample size of 300 participants may have helped in finding small effects (Szymanski & Danek, 1992). Szymanski and Danek (1992) indicated that the use of an alpha level of .05 “resulted in power of less than .50 for most comparisons, in other words less than a 50% chance of finding differences or relationships that actually exist…such adjustments of alpha are recommended in situations of fixed sample size” (cited Rosenthal & Rosnow, 1984 and Cohen, 1988, p. 52).

Future researchers may identify additional consumer and/or counselor factors and their relationship to the employment outcome. These factors may include consumer
demographics and appropriateness of the employment outcome. The appropriateness of an employment outcome may consider the following factors:

- Was there reasonable job site accommodations and technology in regard to the consumers’ disability related impairments?
- Did the job aggravate the clients’ disabilities?
- Was the job commensurate with the consumers’ interest and abilities?
- Did the employer provide employee benefits such as health insurance and retirement?
- If the consumer received social security, does their job negate the necessity of continual benefits?

Further research should address the appropriateness of consumer outcomes by considering factors such as the following:

- Does the age of the consumer at the time of application predict their employment outcome?
- Does the consumer’s level of education at time of application predict the outcome?
- Does the age of the consumers and their primary disabilities predict the outcome?
APPENDIX A

LETTER OF PERMISSION FROM THE HUMAN
SUBJECTS PROTECTION COMMITTEE
9 September 2003

Priscilla Sanderson, Ph.D. candidate
Special Education, Rehabilitation, and School Psychology
P.O. Box 247
Flagstaff, AZ 86002

RE: **BSC B03.163: AN INVESTIGATION OF SELECTED FACTORS CORRELATING TO VOCATIONAL REHABILITATION OUTCOMES**

Dear Ms. Sanderson;

We received your research proposal as cited above. The procedures to be followed in this study pose no more than minimal risk to participating subjects. Regulations issued by the U.S. Department of Health and Human Services [45 CFR Part 46.110(b)] authorize approval of this type project through the expedited review procedures, with the condition(s) that subjects' anonymity be maintained. Although full Committee review is not required, a brief summary of the project procedures is submitted to the Committee for their endorsement and/or comment, if any, after administrative approval is granted. Therefore approval for this project is granted and the enclosed Consenting documents reflect an expiration date of 9 September 2004.

The Human Subjects Committee (Institutional Review Board) of the University of Arizona has a current assurance of compliance, number FWA00004218, which is on file with the Department of Health and Human Services and covers this activity.

Approval is granted with the understanding that no further changes or additions will be made either to the procedures followed or to the consent form(s) used (copies of which we have on file) without the knowledge and approval of the Human Subjects Committee and your College or Departmental Review Committee. Any research related physical or psychological harm to any subject must also be reported to each committee.

A university policy requires that all signed subject consent forms be kept in a permanent file in an area designated for that purpose by the Department Head or comparable authority. This will assure their accessibility in the event that university officials require the information and the principal investigator is unavailable for some reason.

Sincerely yours,

[Signature]

Theodore J. Glattke, Ph.D.
Chair
Social and Behavioral Sciences Human Subjects Committee

TJG:pm
cc: Departmental/College Review Committee

Enclosure(s)
APPENDIX B

VOCATIONAL REHABILITATION SUPERVISOR QUESTIONNAIRE
Vocational Rehabilitation Supervisor Questionnaire

The purpose of this survey is to identify the number of different rehabilitation counselors (i.e., counselor of record) a consumer has had during the vocational rehabilitation process (including interim counselor or supervisor). There are no known risks from your voluntary participation. Your time will be needed to complete the questionnaire which may last from 30 minutes to 1 hour, uninterrupted for each closed case file and is dependent upon your knowledge of the case and amount of paperwork in the case file to be reviewed. If the questionnaire is completed, consent for use of the information is granted.

Please complete the questionnaire. Please accurately record the following cases:

<table>
<thead>
<tr>
<th>Client Case File Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
</tbody>
</table>

Thank you for your participation in completing this questionnaire.
**Section I:** Section I is a request for your contact information, in case I need to verify information that you’ve completed in this questionnaire. This research study will follow procedures of confidentiality and anonymity.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>VR Office Site Code: ______________________</td>
</tr>
<tr>
<td>2.</td>
<td>Name of person completing This Questionnaire: ______________________</td>
</tr>
<tr>
<td>(a)</td>
<td>Title of Person Completing This Questionnaire: ______________________</td>
</tr>
<tr>
<td></td>
<td>______________________</td>
</tr>
<tr>
<td>(b)</td>
<td>Daytime Telephone Number: ______________________</td>
</tr>
<tr>
<td>(c)</td>
<td>E-Mail Address: ______________________</td>
</tr>
</tbody>
</table>
**Section II:** For each consumer case file number, please check the correct information and accurately record the correct response. Note: Complete Section II for each consumer case file numbers.

<table>
<thead>
<tr>
<th>VR Consumer Case File Number:</th>
</tr>
</thead>
</table>

1. Please record the number of each counselor or interim counselor number(s) and supervisor number who worked with this consumer case file number:

<table>
<thead>
<tr>
<th>Counselor(s) or Interim Counselor or Supervisor Number that case-managed the VR consumer case file number above:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
</tr>
</tbody>
</table>

Note: If more space is needed, attach additional counselor numbers.

2. If a VR counselor number vacated a consumer’s case prior to status 26 or status 28 closure, check the reason for the counselor’s departure and when:

<table>
<thead>
<tr>
<th>Counselor Number</th>
<th>Resigned to go to another job that is not with Arizona RSA. When: __________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resigned to transfer to another office with Arizona RSA. When: __________________</td>
<td></td>
</tr>
<tr>
<td>Promoted to another Arizona RSA job. When: __________________</td>
<td></td>
</tr>
<tr>
<td>Promoted to another job that is not with Arizona RSA. When: __________________</td>
<td></td>
</tr>
<tr>
<td>Retired from Arizona RSA. When: __________________________________________________________</td>
<td></td>
</tr>
<tr>
<td>Leave of Absence with pay. When: ________________________________________________________</td>
<td></td>
</tr>
<tr>
<td>Leave of Absence without pay. When: ____________________________________________________</td>
<td></td>
</tr>
<tr>
<td>Death. When: __________________________________________________________________________</td>
<td></td>
</tr>
<tr>
<td>Don’t Know. When: _____________________________________________________________________</td>
<td></td>
</tr>
<tr>
<td>Other: _______________________________________________________________________________ When: __________________</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

ARIZONA RSA COUNSELOR QUALIFICATIONS FORM
Arizona RSA Counselor Qualifications

The purpose for requesting the Arizona RSA Counselor Qualifications is to gain counselor qualifications that served the randomly selected cases. Per review of Human Resources data, please check the appropriate box(es) for each counselor.

Counselor Assigned Number: ________________

1.  Counselor Sex:   (1) □ Male  (2) □ Female

2.  Level of Education:
   (1) □ Masters degree in rehabilitation counseling.
   (2) □ Masters degree in related majors (counseling and guidance).
   (3) □ Masters degree in unrelated majors (business, education).
   (4) □ Bachelor’s degree in rehabilitation and related majors.
   (5) □ Bachelor’s degree in non-related majors.
   (6) □ Associate degree in non-related majors.
   (7) □ Associate degree, certificate, or other.
   (8) □ High school diploma

3.  Certified Rehabilitation Counselor (CRC):  (1) □ Yes  (2) □ No

4.  The length of employment in years and months as an AZ RSA counselor:
   (1) Year(s) _______________  (2) Month(s) ______________

5.  General and Specialty Caseload Assignment during tenure as an Arizona RSA counselor (may be more than one):
   (1) □ General.  (8) □ Arizona State University.
   (2) □ Program Representative.  (9) □ School to Work transition
   (3) □ Jobs (welfare to work).  (10) □ Traumatic Brain Injury
   (4) □ Blind/Visually Impaired.  (11) □ Industrial Commission of Arizona
   (5) □ Deaf/Hearing Impaired.  (12) □ Rehab Counselor for the Deaf
   (6) □ Youth Transition Program.  (13) □ Employment Support Services
   (7) □ Severely Mentally Ill.  (14) □ Other ______________________
APPENDIX D

PRIMARY DISABILITY AT APPLICATION
### Primary disability at application

<table>
<thead>
<tr>
<th>Primary Disability</th>
<th>* Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Impairments</td>
<td>65</td>
<td>30</td>
</tr>
<tr>
<td>Psychosocial Impairments</td>
<td>56</td>
<td>26</td>
</tr>
<tr>
<td>Other Mental Impairments</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>Mobility Orthopedic/Neurological</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Other Orthopedic (Limited Range of Motion)</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Blindness</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Deafness/Communication Visual</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Both Mobility and Manipulation or Dexterity</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Orthopedic/Neurological</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Physical Impairment</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Hearing Loss/Auditory</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Manual/Dexterity Orthopedic/ Neurological</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Deafness/Communication Auditory</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Other Visual Impairment</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>General Physical Debilitation</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Deaf-Blindness</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Communication Impairments (expressive/receptive)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Respiratory Impairment</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>214</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Missing data for one case.*
APPENDIX E

AVERAGE COUNSELOR QUALIFICATIONS SCORE
**Average counselor qualifications score (level of education, CRC, length of employment)**

- **Variable**
- **Frequency**
- **Percent (%)**

<table>
<thead>
<tr>
<th>Average Counselor Qualifications Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.00</td>
</tr>
<tr>
<td>5.00</td>
</tr>
<tr>
<td>5.33</td>
</tr>
<tr>
<td>5.50</td>
</tr>
<tr>
<td>5.67</td>
</tr>
<tr>
<td>5.75</td>
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<td>6.00</td>
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<td>6.20</td>
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<td>6.33</td>
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<td>6.50</td>
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<td>8.00</td>
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</tr>
<tr>
<td>9.00</td>
</tr>
<tr>
<td>10.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

*One case missing.*
### Counselor caseload assignment

<table>
<thead>
<tr>
<th>Type of Caseload Assignment</th>
<th>Number of Counselors</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>42</td>
</tr>
<tr>
<td>Other (unspecified)</td>
<td>21</td>
</tr>
<tr>
<td>Severely Mentally Ill</td>
<td>19</td>
</tr>
<tr>
<td>School to Work</td>
<td>8</td>
</tr>
<tr>
<td>Blind/Visually Impaired</td>
<td>7</td>
</tr>
<tr>
<td>Youth Transition Program</td>
<td>3</td>
</tr>
<tr>
<td>Traumatic Brain Injury</td>
<td>3</td>
</tr>
<tr>
<td>Employment Support Services</td>
<td>3</td>
</tr>
<tr>
<td>Program Representative</td>
<td>1</td>
</tr>
<tr>
<td>Rehabilitation Counselor for the Deaf</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
</tr>
</tbody>
</table>
REFERENCES


25th Institute on Rehabilitation Issues. (1999). Commissioner’s charge to the members of

