

INFORMATION TO USERS

The most advanced technology has been used to photograph and reproduce this manuscript from the microfilm master. UMI films the original text directly from the copy submitted. Thus, some dissertation copies are in typewriter face, while others may be from a computer printer.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyrighted material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each oversize page is available as one exposure on a standard 35 mm slide or as a 17" × 23" black and white photographic print for an additional charge.

Photographs included in the original manuscript have been reproduced xerographically in this copy. 35 mm slides or 6" × 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.



300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA

Order Number 8814281

**Predicting vocational rehabilitation outcome among clients with
a psychiatric disability**

Titone, John Christopher, Ph.D.

The University of Arizona, 1988

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

PREDICTING VOCATIONAL REHABILITATION OUTCOME
AMONG CLIENTS WITH A PSYCHIATRIC DISABILITY

by

John Christopher Titone

A Dissertation Submitted to the Faculty of the
DIVISION OF SPECIAL EDUCATION AND REHABILITATION

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY
WITH A MAJOR IN REHABILITATION

In the Graduate College

THE UNIVERSITY OF ARIZONA

1 9 8 8

THE UNIVERSITY OF ARIZONA
GRADUATE COLLEGE

As members of the Final Examination Committee, we certify that we have read
the dissertation prepared by John Christopher Titone

entitled Predicting Vocational Rehabilitation Outcome
Among Clients with a Psychiatric Disability

and recommend that it be accepted as fulfilling the dissertation requirement
for the Degree of Doctor of Philosophy.

Amos Sales
Amos Sales, Ed.D. 3/7/88
Date

Jim Organist
Jim Organist, Ph.D. 3/7/88
Date

Bob Johnson
Bob Johnson, Ed.D. 3/7/88
Date

Larry Beutler
Larry Beutler, Ph.D. 3/7/88
Date

Date

Final approval and acceptance of this dissertation is contingent upon the
candidate's submission of the final copy of the dissertation to the Graduate
College.

I hereby certify that I have read this dissertation prepared under my
direction and recommend that it be accepted as fulfilling the dissertation
requirement.

Amos Sales
Dissertation Director Amos Sales, Ed.D. 3/7/88
Date

STATEMENT BY AUTHOR

This dissertation has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this dissertation are allowable without special permission, provided that accurate acknowledgement of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his or her judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: John Christopher Titone

ACKNOWLEDGMENTS

The excitement that is felt upon completing a dissertation and a doctoral program can only be matched by the gratitude felt towards all who have assisted in this effort. First and foremost, my thoughts turn to my wife, Velma. Without her warm and loyal support, encouragement, and love, I could not have brought about such a major accomplishment. She gave up much, both emotionally and materially, to see me through this demanding process and stood by me throughout. Her sacrifices have earned her an equal share in the congratulations that are due this work.

Thank you also to my children, Dominic and Lucas, who amazed my professors with their patience and cooperation in sitting through classes and in joining me in seemingly endless treks to libraries. Their innocent and wide-eyed cheers for each event along the doctoral path were a joy and a source of energy for the next task at hand.

Next to one's own efforts, success in a doctoral program rests on the quality of one's committee, and I had a great one. To Dr. Amos Sales, my committee chairman, Dr. Jim Organist, Dr. Bob Johnson, Dr. Hal Arkowitz, Dr. Larry Beutler, and Dr. Marlene Bentz I give a heartfelt "Thank you." All doctoral students should be so fortunate as to possess a committee so rich in knowledge, expertise, and support.

Gratitude for making the necessary data available and for encouragement in this project goes to the Arizona State Rehabilitation Services Administration, in particular Charles Van Boskirk, Richard Daigh, and the Tucson-based staff, as well as to the staff of La Frontera Vocational Rehabilitation Program. A special "Thank you" is extended to Dr. Pat Jones, who provided the expertise and guidance that brought meaning to statistics and opened to me the world of computer analysis. Credit for the beautiful and timely manuscript preparation belongs to Sheila Hughes.

Space does not allow for the mention of everyone who has contributed in so many ways to the completion of my program. There are my ever-supportive sisters, my wife's generous family, and the friends who have given so much. However, special recognition, gratitude, and honor must go to those without whom I could not have done this work and whose love and support have been felt since my birth. Thus I dedicate this dissertation to my parents--to my mother Ann and to my father John who died before this project could be completed.

TABLE OF CONTENTS

	Page
LIST OF TABLES	6
ABSTRACT	8
1. THE PROBLEM	10
Background of the Problem	10
Statement of the Problem	12
Purpose of the Study	13
Importance of the Study	13
Questions	14
Limitations of This Study	15
Hypotheses	16
Definitions and Clarification of Terms and Concepts	17
Summary	18
2. REVIEW OF LITERATURE	20
Related Studies	20
Specific Research Variables	23
Age	23
Ethnic Background	24
Education	26
Age of Onset	27
Employment History	27
Living Situation	28
Ability To Get Along With Others	30
Training and Support	31
Summary and Conclusion	33
3. DESIGN AND METHOD	35
Population	35
Study Variables	37
Relationship Among the Predictor Variables	41
Relationship Between the Predictor and Predicted Variables	43
Method and Limitations	44
Data Collection	47
Summary	48

TABLE OF CONTENTS--Continued

	Page
4. RESULTS AND DISCUSSION	49
Results	49
Additional Results	55
Further Analyses of Interest	55
Among the Predictor Variables	61
Training Services and Support Services	62
Discussion	69
Summary	77
5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	78
Summary	78
Conclusions	81
Recommendations	83
Summary	87
SELECTED BIBLIOGRAPHY	88

LIST OF TABLES

Table	Page
1. Logistic Regression Results for the Effect of Predictor Variables on Closure Status Using the Whole Sample	51
2. Logistic Regression Results for the Effect of Predictor Variables on Employment Status While Controlling for an Additional Disability	52
3. Results of a Chi-Square Analysis Testing the Effect of Ability to Get Along With Others on Closure Status	56
4. Results of a Chi-Square Analysis Testing the Effect of Ability to Get Along With Others on Closure Status While Controlling for an Additional Disability	57
5. Results of a Chi-Square Analysis Testing the Effect of Support Services on Closure Status for the Whole Sample	59
6. Results of a Chi-Square Analysis Testing the Effect of Support Services on Closure Status While Controlling for an Additional Disability	60
7. Results of a Chi-Square Analysis Testing the Effect of University/College Training on Closure Status	64
8. Results of a Chi-Square Analysis Testing the Effect of Business/Vocational Training on Closure Status	64
9. Results of a Chi-Square Analysis Testing the Effect of Work Adjustment Training on Closure Status	65
10. Results of a Chi-Square Analysis Testing the Effect of On-the-Job Training on Closure Status	65

LIST OF TABLES--Continued

Table	Page
11. Results of a Chi-Square Analysis Testing the Effect of Miscellaneous Training on Closure Status	66
12. Results of a Chi-Square Analysis Testing the Effect of Restoration Support on Closure Status	66
13. Results of a Chi-Square Analysis Testing the Effect of Placement Support on Closure Status	67
14. Results of a Chi-Square Analysis Testing the Effect of Transportation Support on Closure Status	67
15. Results of a Chi-Square Analysis Testing the Effect of Maintenance Support on Closure Status	68
16. Results of a Chi-Square Analysis Testing the Effect of Counseling and Guidance Support on Closure Status	68

ABSTRACT

Individuals with a psychiatric disability have had the poorest vocational outcomes of all the disabled populations when comparing rehabilitation success rates. The purpose of this study was to explore the relationships between selected background, social, and service variables and vocational rehabilitation outcome in order to identify potential indicators of success or failure.

Data was gathered from records in the Tucson, Arizona offices of the state-federal vocational rehabilitation program. The sample included 210 White and Hispanic subjects with a psychiatric disability. Their records had been closed in the years 1983 through 1987.

The independent variables were the background variables of Age, Age of Onset, Ethnicity, and Educational Level, the social variables of Living Situation, Ability To Get Along With Others, and Employment History, and the service variables of Training and Support. The dependent variable was Employment Status as determined by the vocational rehabilitation program: Successful subjects, coded a Status 26, were closed having been employed at least 60 days; unsuccessful subjects, coded a Status 08, 28, or 30, left the program unemployed.

The study followed a correlational design using a regression approach. Logistic Regression Analysis with forward selection was the strategy employed to identify the best predictive model. A chi-square test of independence was used to further study variables that showed some predictive potential. An effort was made to control for the presence of one or more additional disabilities.

The results indicated that the variables most highly related to Employment Outcome, in the order of their importance, were Training, Employment History, and Ability To Get Along With Others. Ability To Get Along With Others disappeared as a key indicator when the sample was divided into single and multiple disability groups. However, the findings suggest that Ability To Get Along With Others and Support Services may contribute to the effect of the two more powerful variables. It is also cautiously suggested that Training that is job-related and skill-building in nature may be more useful than formal education for this population.

CHAPTER 1

THE PROBLEM

This chapter discusses the problem that underlies the rationale for this study. It examines the background of the problem, provides a statement of the problem, and looks at the purpose and importance of the study. The questions to be answered and the hypotheses to be tested are outlined. The limitations of this research are presented, as are the definitions and clarifications of terms and concepts used in the study.

Background of the Problem

Individuals with psychiatric disabilities have the poorest outcomes of all disabled populations when comparing rehabilitation success rates (Katz-Garris, McCue, and Garris, 1983). Yet since 1943 federal legislation has made this disadvantaged group a legitimate focus of vocational rehabilitation efforts and resources. Following that directive, little special programming was done in this area because little was known about the impairment itself and even less about the impact of the impairment on day-to-day functioning. The orientation of intervention was toward treatment and not rehabilitation.

Advances in our understanding of the impairments underlying psychiatric disabilities and progress in the control of symptoms has led to a changing perspective. Turner and Gartrell (1978) assert that psychiatric impairment can no longer be considered the most important predictor of a person's ability or desire to work. Society, at least in theory and belief, has taken a stand for equal opportunity for all its citizens. Thus gradually we have seen a rehabilitation orientation which strives for an optimal level of functioning expand upon a primarily treatment and maintenance perspective in dealing with psychiatric impairment and disability. Recent Arizona legislation has broadened the range of services and resources available to individuals with a psychiatric impairment, and recent federal legislation has expanded the role of the state-federal vocational rehabilitation system in serving individuals with a psychiatric disability who are handicapped with regard to employment.

Arizona's Rehabilitation Services Administration under the Department of Economic Security has as its primary responsibility the return of individuals with handicapping disabilities to the workplace. Through a process of application, assessment, plan development, and delivery of varied services, an individual is assisted in finding a job or activity that represents his/her optimal level of

functioning. Approximately 10 percent of the clientele of the department have a psychiatric disability. La Frontera Center, Inc., a community mental health center in Tucson, Arizona, offers as one of its services a vocational training program aimed primarily at those with a psychiatric disability. Through contractual arrangements it provides this service for clients admitted to the Arizona Rehabilitation Services Administration who meet the criteria of a psychiatric disability and live in the Tucson or Pima County area. Other similar programs are under development.

A vocational rehabilitation program focusing solely on a population with a psychiatric disability is a relatively new intervention in the psychiatric field. It is an example of the growing attention and emphasis being placed on employment in conjunction with this unique population.

Statement of the Problem

Vocational rehabilitation services and the financial and human resources for these are expanding to meet the identified needs of individuals with a psychiatric disability. Yet the rehabilitation outcome data with this population has been discouraging.

The risk of resources being used inefficiently and ineffectively and the risk of further human failure and discouragement runs high. The problem studied here is

embodied in the following question: Can a set of selected background, social, and service variables act as significant indicators of vocational rehabilitation outcome?

Purpose of the Study

This study intended to explore the relationships between selected background, social, and service variables and vocational rehabilitation outcome. Variables that have proven of interest in prior work and that have attracted current scientific attention were the focus. It was also intended here that additional hypotheses be generated for future research.

Importance of the Study

This study has value for a number of reasons:

1. This research will be useful to vocational rehabilitation counselors who work with the Arizona State Rehabilitation Services Administration, with La Frontera Center's Vocational Rehabilitation Program, and with other programs offering similar services to individuals with a psychiatric disability.
2. It will assist in the identification of vocational rehabilitation clients who would have a high probability of success or would be at risk for failure without special intervention.

3. This study suggests areas for intervention so as to increase the probability of successful outcome.
4. It identifies other variables and suggests additional hypotheses deserving of further study.
5. This research adds to the existing body of knowledge on this important subject.

Questions

The specific questions to be considered in this study are:

1. What is the relationship between the background variables of Age, Age of Onset, Race, and Educational Level and the variable of vocational rehabilitation outcome?
2. What is the relationship between the social variables of Living Situation, Ability To Get Along With Others, and Employment History and the outcome variable of employment?
3. What is the relationship between the vocational rehabilitation service variables of Training and Support and vocational rehabilitation outcome?
4. When taken together, which of these variables make the greatest predictive contribution to vocational rehabilitation outcome?

Limitations of This Study

The following limitations apply to this study and its results:

1. The sample of the population of individuals with a psychiatric disability in this study was restricted to those White and Hispanic persons who were served in the Pima County, Arizona area by the Tucson, Arizona-based offices.
2. A subject was assessed as having a psychiatric disability based on the assignment of a specific disability code by Rehabilitation Services Administration. The diagnostic categories incorporated within this code are heterogeneous, having a range which includes psychotic disorders and major affective disorders with psychotic features.
3. The study included only those vocational rehabilitation clients whose cases were closed during the period of 1983 through 1987.
4. The sample studied was limited in its age range to approximately 18 to 60. Clients are not eligible for vocational rehabilitation services until age 18 and after age 60 the low probability of successful placement often leads to a counselor exploring alternatives to employment with the client.

5. The sample studied was small relative to the large numbers of individuals with a psychiatric disability.
6. Motivation for employment was assumed to be present given the requirement for each client to initiate and follow through with an application process. Variations in the level of motivation were not considered in this study.
7. Within the area of Training and Support services, combinations of these were often used. This study was unable to assess the effect of the varied combinations upon outcome.

These points should limit efforts to generalize this study's findings beyond the scope herein described.

Hypotheses

1. Age, Age of Onset, Educational, and Ethnic differences are related to vocational rehabilitation outcome.

These background variables were chosen because they offer a potentially simple set of predictors of outcome. In addition, the variable of Education would have suggested an easily implemented intervention if it was assessed as a key

factor. The concern about potential discrimination led to consideration of Ethnicity in the study.

2. Differences in Living Situation, Ability To Get Along With Others, and Employment History are related to vocational rehabilitation outcome.

Interest in these socially-oriented variables grew out of this researcher's experiences and out of concerns expressed by vocational rehabilitation agencies serving this population. The diversity that exists among this group along the range of these variables generated questions about their impact.

3. The provision of Training services and Support services are related to vocational rehabilitation outcome.

The bulk of financial resources committed to the vocational rehabilitation of this population is directed into these services. It is, therefore, of interest whether their use is effectively related to outcome.

Definitions and Clarification of Terms and Concepts

Definitions of the following terms will apply:

Arizona State Rehabilitation Services Administration:

This combined state-federal program has as its mission the implementation of the local vocational rehabilitation program. Its process includes

application, evaluation, and a range of services ending ideally in an employment situation that represents the best match between client and job. When an individual has been successfully placed and employed for a minimum of 60 days, he or she receives a closure "Status 26" indicating a positive outcome. If employment could not be achieved because the client could or would not complete the program, a closure "Status 28," "Status 08," or "Status 30" indicates an unsuccessful outcome.

Psychiatric disability: This term refers to an individual's inability or difficulty in functioning as a direct result of a mental impairment which in this study will be limited to the psychotic disorders. In this regard, it would be useful to clarify the differences among the following three terms used in rehabilitation: An impairment is a physical or mental condition that is diagnosed by a physician or psychologist. A disability refers to the functional limitations that result from an impairment. A handicap refers to the social disadvantage experienced by an individual with a disability in the context of the limitations of his or her environment.

Psychiatric disorder: This term makes reference to the impairment that serves as the basis of a psychiatric disability. It encompasses the diagnostic categories listed in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (American Psychiatric Association, 1980), under the titles "Schizophrenic Disorder," "Paranoid Disorders," and "Psychotic Disorders Not Elsewhere Classified."

Vocational rehabilitation: This term encompasses a process and a related set of services that are targeted for individuals who as a result of their disability are experiencing handicaps to employment. The desired outcome or goal of this process and set of services is employment.

Summary

Chapter 1 has provided an introduction to the study by examining the purpose and importance of the research. The problem that underlies the need for the study was

discussed, and specific questions were generated. The limitations that apply to this research were enumerated. The chapter concluded with a presentation of the hypotheses to be tested and definitions of terms and concepts used throughout the study.

CHAPTER 2

REVIEW OF LITERATURE

Chapter 2 provides a review of the literature relevant to the study. Consideration is first given to studies that are similar to and give research support for this effort. The sections that follow address each of the variables covered by this study, providing research backing for their inclusion herein. The final section summarizes the major points of the chapter.

Related Studies

The idea of examining background, social, and service variables in relationship to the outcome variable of employment has been the focus of a number of researchers. Variations, however, in the settings, samples, variable criteria, and strategies used make comparisons difficult. Aiduk and Langmeyer (1972) studied a group from an Ohio State hospital-based vocational rehabilitation program. This sample included individuals with widely varying disorders, including psychoses, neuroses, alcoholism, behavioral problems, mental retardation, and epilepsy. A total of ten biographical variables, together with six psychological tests, were studied by Goss and Pate (1967) on

a vocational rehabilitation ward of a Veterans Administration hospital. Of the 135 subjects, only 26 fell into the category of the psychotic disorders. A much larger sample was used by Lorei and Gurel (1973), who researched a Veterans Administration vocational evaluation project defining their sample according to chronicity--an average of four years of hospitalization. No attempt was made to further categorize the specific impairment contributing to the disability.

Parks (1974) and Brooks (1981) developed their studies out of the community-based Vocational Rehabilitation departments in their respective states. Nineteen demographic variables were the focus of Parks's study. He also had a mixed diagnostic group among his sample of "psychiatric clients." His results will be discussed at a later point in this chapter.

In his study, Brooks (1981) explored the predictive relationship between twenty demographic variables and eleven treatment/training variables and the rehabilitation outcome of employment. His sample of 166 included "clients with a psychiatric disturbance" who had been served by the Michigan State Vocational Rehabilitation Agency from 1977 through 1979. This sample included subgroups with psychotic, neurotic, and personality disorders. The only variables that were suggested to be significantly related to

successful outcome for individuals within the psychotic category were a previous agency closure with an unsuccessful outcome, a shorter period of time between referral and the development of a plan, and the possession of a driver's license. The fact that none of the treatment and training services were related to outcome is of concern given current wisdom about rehabilitation of this population, but this matter will be addressed at length under consideration of this study's variables. The lack of significance, however, could be related to the large number of variables used and the relatively small size of the sample and the vague diagnostic criteria used.

Of the studies described above, three (Brooks, 1981; Parks, 1973; and Aiduk and Langmeyer, 1972) defined "employment" according to the assignment of a Status 26 to the type of closure. A Status 26 closure within state-federal vocational rehabilitation programs indicates that a person has been consistently employed in a work situation whether part-time or full-time for a minimum of 60 days. Other studies to be considered under "Specific Research Variables" in this chapter have used similar criteria (Alharthi, 1984; Saxon, Spitznagel, and Shellhorn-Schutt, 1983; and Loeb, et al., 1974). Deviations in criteria among researchers in this field have generally been in the follow-up period (length of employment). They have assessed

employment outcome at the completion of a vocational program (Douzinas and Carpenter, 1981; Green, Miskimins, and Keil, 1968; Sturn and Lipton, 1967; and Goss and Pate, 1967) at a one-month period (Ethridge, 1968), at a three-month period (Wilson, Berry, and Miskimins, 1969), at a six-month period (Sultan and Johnson, 1984; Watts and Bennett, 1977; Buell and Anthony, 1973; and Lorei, 1967), at a nine-month period (Lorei and Gurel, 1973), and at a fourteen-month period (Mantonakis, et al., 1982). These differences in criteria for employment suggest that caution must be used in comparing results.

Specific Research Variables

Age

While discussing their opinion about which criteria were related to the successful rehabilitation of individuals with a psychiatric disability, Katz-Garris, McCue, and Garris (1983) concluded that age of the client group was one of the variables related to rehabilitation outcome. A study by Buell and Anthony (1973) gave support to this position. The nature of this relationship, however, may still be open to question. A number of authors, including Coleman (1986), Saxon, Spitznagel, and Shellhorn-Shutt (1983), Lorei and Gurel (1973), Aiduk and Langmeyer (1972), and Green, Miskimins, and Keil (1968) suggest that younger individuals

with a psychiatric disability have better outcomes with regard to employment. Mezquito-Blanco (1984) found that middle-aged patients have the best rehabilitation prospects. Five studies--Brooks (1981), Loeb et al. (1974), Parks (1974), Wilson, Berry, and Miskimins (1969), and Ethridge (1968)--did not identify age as having any significant relationship to the criteria variable of employment. The heterogeneous nature of the population studied, the varied program settings serving as data sources and the differing criteria for employment outcome contribute to the mixed results.

Ethnic Background

Jenkins and Amos (1983), in their study of Black college students, found that Black students who were disabled believed themselves to be at an immense disadvantage in the work world as a result of both their ethnic and disability statuses. Studies by Coleman (1986) and Lorei (1967) support this position, finding that individuals who are disabled and Black tend to have poorer rehabilitation outcomes with regard to employment. Buell and Anthony (1973) and Lorei and Gurel (1973) divided their subjects into White and Non-white, but came up with the same results for the Non-white sample. Only Loeb et al. (1974) found no differences along the variable of ethnicity as a predictor of employment outcome.

There were attempts to explore further this relationship between ethnic background and employment outcome. Douzinas and Carpenter (1981) and Aiduk and Langmeyer (1972) divided their samples between those who were Black and those who were White and again had results favoring subjects who were White. However, they found interactional patterns between ethnic background and other variables. Douzinas and Carpenter (1981) found ethnicity to be highly correlated with living arrangements. Individuals who were Black, psychiatrically disabled, and lived with their families had especially poor outcomes. Such an arrangement, the authors suggest, promotes a dependency that is counterproductive to the goals of rehabilitation. Aiduk and Langmeyer (1972) found an interaction among ethnic background, education, and employment outcome. They observed that the differences on the criterion variable of employment between subjects who were White and those who were Black tended to disappear as the amount of education of both disabled groups became equivalent.

While these findings may be applicable to other ethnic groups as well, it must be noted that no studies could be found assessing the relationship between other ethnic backgrounds and employment outcome for individuals with a psychiatric disability. It is believed that studying such a relationship with regard to an Hispanic background

may be useful for those providers who are developing rehabilitation programs for and serving a population that is largely Hispanic as exists in the Southwest.

Education

Studies addressing the variable of education and its relationship to employment outcome for individuals with a psychiatric disability generally found that better educated subjects had better outcomes (Coleman, 1986; Katz-Garris, McCue, and Garris 1981; Douzinas and Carpenter, 1981; Lorei and Gurel, 1973). Saxon, Spitznagel, and Shellhorn-Schutt (1983) could not assert significance to the relationship between education and employment, but it must be noted that their sample included individuals with highly varied impairments including mental illness, mental retardation, and several severe physical conditions. Level of education may have less of an effect over a more heterogeneous population. Others who found no differences in employment outcome along the variable of education were Loeb et al. (1974) and Wilson, Berry, and Miskimins (1969). In addition to the value of education itself in terms of the employment outcome, interest in its impact needs to be considered in conjunction with other variables such as has already been discussed with regard to ethnic background.

Age of Onset

Individuals with physical disabilities generally experience more successful vocational rehabilitation outcome when the age of onset of their disability is at a younger age. This allows for the gradual assimilation of and adaptation to the disability through the adult years. For a psychiatric disability, however, research by Mantonakis et al. (1982) and Parks (1974) suggested that an older age of onset correlates with employment outcome. Mantonakis et al. (1982) hypothesized that a more advanced age of impairment and disability produced less severe personality disintegration which would bode well for an eventual goal of employment or re-employment. Saxon, Spitznagel, and Shellhorn-Schutt (1983) produced results that conflicted with their view, suggesting that individuals who were younger when first disabled had better employment outcomes. Again, it must be noted that these researchers had mixed disability groups within their sample which included physical impairments.

Employment History

Anthony and Jansen (1984) concluded that the employment history of individuals with a psychiatric disability was the best predictor of future vocational rehabilitation. This has been a relatively consistent finding in various studies assessing the variable

(Mesquito-Blanco, 1984; Mantonakis et al. 1982; Watts and Bennett, 1977; Strauss and Carpenter, 1974; Parks, 1974; Buell and Anthony, 1973; Lorei and Gurel, 1973; Green, Miskimins, and Keil, 1968; Lorei, 1967; Sturm and Lipton, 1967; Lipton and Kaden, 1965). This result was maintained in these studies despite the widely diverse definitions of "employment history" found in them.

Employment history was assessed from various points of view: the number of months of unemployment two years prior to program admission (Watts and Bennett, 1977); one year of continuous employment (Buell and Anthony, 1973); the number of months of full-time employment in five years prior to program release (Lorei and Gurel, 1973); the number of jobs in the past two years (Green, Miskimins, and Keil, 1968); less than six months' unemployment in the last five pre-program years (Sturm and Lipton, 1967); earnings during the year prior to the program (Lipton and Kaden, 1965).

Of special interest in this study was whether the strength of employment history as a correlate of employment outcome continued to hold up when the effect of the service variables of training and support were considered.

Living Situation

In this study "Living Situation" was divided into three categories: (a) living alone, (b) living with family, and (c) living with unrelated others. Living alone and its

relationship to employment of individuals with a psychiatric disability has not been the focus of much prior research. Green, Miskimins, and Keil (1968) studied this issue from the point of view of individuals' tendencies to move away from or move toward people linking better outcome with an orientation toward people. There is little other literature addressing this point.

With regard to family connections, Coleman (1986) suggests that, while family support and encouragement is an important contributor to successful vocational rehabilitation outcome, living with family of origin or with a spouse does not correlate with a positive outcome. In their study of 65 subjects with schizophrenia, Mantonakis et al. (1982) came to the same conclusion, hypothesizing that ability to maintain some independence may be related to successful outcome. Douzinas and Carpenter (1981) had a sample of 70 subjects of whom 74 percent were schizophrenic. Sixty-two percent lived with their families of origin or with their spouses, while the balance (38 percent) resided alone or in sheltered care. The findings linking this variable with employment outcome led the authors to comment that it may be better for this population to avoid being in a living situation where taking the role of a child is encouraged. With regard to this study, the connection

between living arrangement and ethnicity was previously addressed under the "Ethnic Background" section.

Ability to Get Along With Others

Farley, Akridge, and Rice (1986) and Watts (1976) have commented on the importance of social relationships or effective interpersonal functioning in the outcome of vocational rehabilitation for the psychiatric population. Previous studies by Strauss and Carpenter (1974), Green, Miskimins, and Keil (1968), Sturm and Lipton (1967), and Olshansky, Grob, and Ekdahl (1960) have offered support for the value of social relationships toward a rehabilitation goal. Sultan and Johnson (1984), in their more recent study, examined a group of 38 individuals with a psychiatric disability who either refused to enter or dropped out of a vocational rehabilitation program (44 percent) or remained to its completion (56 percent). The "remainers" perceived themselves as gaining more help and social support from friends than the "refusers" believed they received. This perception by the "remainers" led to a better self-concept and greater satisfaction with their lives. The relationship of this factor to the outcome variable of employment relative to the other variables studied suggests priorities for future intervention and commitment of resources.

Training and Support

Anthony and Farkas (1981) and Hursh and Anthony (1983) have contributed to the growing emphasis on skill development and community support as the foundation upon which successful rehabilitation of individuals with psychiatric disabilities must be built.

With such an orientation, the Center for Rehabilitation Research and Training in Mental Health was founded by William Anthony, Ph.D. in Boston, Massachusetts. It promotes the belief that proper training in the skills involved in living and working and the availability of supportive services in the community can result in the successful total rehabilitation of individuals with psychiatric disabilities. Due to the chronic nature of the impairment and its slow response to intervention, closer scrutiny of the long-range effectiveness of this approach will have to await the results of longitudinal studies that are now under way.

For the present, we have such research as that of Douzinas and Carpenter (1981), who studied the successful completion of a training program by individuals with psychiatric disabilities and found it to be positively related to better community functioning, including employment. Looking at the larger arena of the state-federal vocational rehabilitation system, two recent studies

have addressed the effect of training and supportive services offered by the program with disappointing results. Brooks (1981) sought a relationship between the eleven treatment and training services offered by the Michigan state vocational rehabilitation system and employment outcome. He identified about a third of his sample of 166 clients as fitting the criteria for psychotic disorders and divided them into those who became employed and those who did not. Using correlational methods and stepwise regression analysis, he attempted to demonstrate a relationship between the outcome of employment and the following treatment and training services: diagnosis and evaluation; restoration; college or university training; elementary or high school training; business school training; vocational school training; on-the-job training; personal and vocational adjustment; maintenance; services to family members; and an "other" category. He found no differences between those who became employed and those who did not on the basis of these variables.

Alharthi (1985) conducted a study similar to that of Brooks, using 63 subjects with psychiatric disabilities, but diagnostic distinctions were not made. His site was a vocational rehabilitation program offered by the state of Wisconsin. The variables used were equivalent to those in the Brooks (1981) study, and he used discriminant analysis

to process his data. Again, no significant differences were found between successful and unsuccessful clients with psychiatric disabilities on the basis of these variables.

The lack of significance alluded to in the last two studies appears to clash with the rehabilitation orientation toward psychiatric disability that was previously described. However, a closer look at the studies provoke some questions: If the samples were larger or the variables were fewer, would the results have been the same? Were there common factors among the variables that allowed overlap among them? Were the methods of analyses adequate? Answers to these questions have contributed to the method described in this study which has defined somewhat similar goals.

Summary and Conclusion

The literature gives evidence of the existence of a relationship between and among the background, social, and service variables and subsequent employment. The nature of these relationships, however, is unclear due to the limitations and concerns about past research. As has been noted, individuals with a psychiatric disability have proven to be the most difficult to rehabilitate. Yet, this group and their families, as with other disabled groups and their relatives, continue to push for ever-widening opportunities to function in the mainstream of society at an optimal level. Vocational rehabilitation is one of the routes to

this goal, and research must assist in increasing the effectiveness of this effort.

Information about those who succeed and those who do not will facilitate vocational rehabilitation counselor interventions and decisions with regard to program planning and service development. Therein lies the need for this study.

The state-federal vocational rehabilitation system in the United States represents the world's largest concerted effort toward employment and optimal functioning for individuals with psychiatric disabilities. Alharthi (1985), Brooks (1981), and Parks (1974) studied the implementation of this system in their areas and each recognized the need for additional studies in other areas. The Arizona system had not previously been examined with regard to clients with psychiatric disabilities and offered some unique aspects, such as a large Hispanic population, that suggested the need for special study.

CHAPTER 3

DESIGN AND METHOD

This chapter describes the design and procedures used in the collection and analysis of the data. Divisions within the chapter are as follows: (1) population; (2) study variables; (3) relationship among the predictor variables; (4) relationship between the predictor and predicted variables; (5) method and its limitations; and (6) data collection.

Population

The population upon which this research focused was those individuals who had a psychiatric disability and whose impairment was defined by one of the psychotic disorders or major affective disorders with psychotic features. These chronic disorders were described according to the categories numbered 295.1 through 298.90 in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1980). This group represented the most severely impaired of individuals with psychiatric disabilities. The study of the ethnicity of the population further narrowed the group to those who were Hispanic or White. The population to be studied was also defined by its interest in obtaining employment of some kind

as evidenced by having sought out or applied for vocational rehabilitation services.

The sample used in this study was taken from the Arizona State Rehabilitation Services Administration. It was restricted to those Hispanic or White clients admitted and served by the organization in its Tucson offices. The sample included 210 White and Hispanic individuals whose cases had been closed in the years 1983 through 1987 and whose records were available. This represented 90 percent of the total of 233 persons with the balance of the ethnic representation being Black (n=19), Native American (n=3), and Oriental (n=1). They ranged in age from 18 years to 60 years with a mean of 32.36 years and a standard deviation of 9.12 years. Sixty-four percent (n=135) were male, while 36 percent (n=75) were female. These individuals had a psychiatric disability which was based on a psychotic impairment. It was distinguished by the assignment of the primary disability code 500 labeled "psychotic disorders" (Arizona Department of Economic Security, 1986, p. D-1).

Of the sample studied, 96 (46%) had no other recorded disability, and 114 (54%) had at least one other disability. The multiple disability group included 81 subjects (71%) who had other emotional, behavioral, or personality disorders and 33 subjects (29%) who had physical disorders.

Study Variables

The variables of interest in this research were as follows: The predictor variables were the background variables of Age, Ethnicity, Educational Level, and Age of Onset, the social variables of Living Situation, Ability to Get Along With Others, and Employment History, and the services variable of Training and Support. The predicted variable is Employment Status. The following provides a definition or description of each variable as it was used in the study.

Age was categorized according to younger age (17-29), middle age (30-45), and older age (46-65). The distribution was as follows: younger age (n=89); middle age (n=99); older age (n=22).

Ethnicity was divided into White (n=170) and Hispanic (n=40) as identified in subject records.

Educational Level was determined by the highest grade completed and was categorized as follows: Completed grade 12 or above (n=159); Completed grade 11 or below (n=51).

Age of Onset was defined in subject records as the age at which the psychiatric impairment was first identified. It was measured in decades and categorized as follows: Onset age 20 or below (n=98); Onset age 21 or

above (n=110). Two subjects could not be assigned due to insufficient information.

Living Situation was an index of a subject's residential status upon entry into the program. It was divided in the study according to whether a person (a) lived alone (n=67), (b) lived with family of origin, family by marriage, or with extended family (n=103), or (c) lived with unrelated others (n=39). Insufficient information prevented one subject from being assigned. The distinction is a reflection of the Rehabilitation Services Administration's assessment of whether a person lives in a single person household, in a non-family household, or with family.

Ability To Get Along With Others was assessed from client records. Such information was gathered from psychological evaluations, psychosocial evaluations, and vocational rehabilitation counselor evaluations which included sections entitled "Interpersonal Relations." These were done upon the subject's entry into the program. A distinction was made between "getting along well with others" (n=92) and "having difficulty getting along with others" (n=116). Two subjects could not be assigned due to insufficient information. "Getting along well with others" was reflected in the records by positive comments about a subject's social skills, possession of friends, interest in social situations, or comfort level with others. "Having

difficulty getting along with others" was seen in a subject's having poor social skills, having no close friends, avoiding social situations, or being uncomfortable with others.

Employment History was also measured from data available on Rehabilitation Services Administration client records where such information was specifically requested and documented. A dichotomy was made between a "stable" and "unstable" employment history. "Stable" was defined by evidence of at least nine months of continuous employment in at least one job during a period of five years prior to admission to the vocational rehabilitation program (n=82). "Unstable" was measured by report of no employment or less than nine months' employment in any one job during a five-year period prior to admission (n=126).

The variable of Training in this study was defined according to the training services offered by the Rehabilitation Services Administration (Arizona Department of Economic Security, 1986; hereafter referred to as Arizona DES). They were described as follows: College and university was "all academic training on a level higher than a secondary education"; business and vocational training was "non-collegiate post-secondary education"; adjustment was "training which will help the client to adjust to a particular situation hindering the rehabilitation

potential"; on-the-job training was "training in a program whereby the client usually works for wages while learning the skills of a job"; and miscellaneous training was "training that cannot be classified in any of the above training categories" (Arizona DES, 1986, pp. H1-H2). This variable was dichotomized according to whether or not any one of these training services were provided. Those receiving training numbered 129; those who did not receive training totaled 81.

The other service variable described as Support was defined by the following Rehabilitation Services Administration categories (Arizona DES, 1986, pp. H1-H3): Restoration (physical or mental) was "medical or medically related services necessary to correct or substantially modify a . . . mental condition. [It] includes . . . therapy, treatment . . ."; counseling and guidance "includes any of the many different kinds of counseling and guidance services that counselors may have to provide for their clients"; transportation was a "service provided or arranged by the state agency" to facilitate the vocational rehabilitation effort; and maintenance was a service "provided to cover the basic living expenses so that the individual can derive the full benefit of other vocational rehabilitation services provided."

The variable of Support was also dichotomized in this study according to whether or not any one of these services were provided. Subjects receiving support services equaled 125; those not receiving these services numbered 85.

Employment Status was the dependent variable used in this study. It is defined and dichotomized by the closure status assigned each subject at the completion of the vocational rehabilitation program. Successful outcome or employment was represented by a status 26 closure which indicated a subject had been employed for a minimum of 60 days (n=78). Unsuccessful outcome was represented by a status 08, 28, or 30 closure which indicated a subject had not become employed following vocational rehabilitation involvement (n=132).

Relationship Among the Predictor Variables

In establishing the meaningfulness of the results of this study, it was important to address the issue of overlap among the variables included in the research. If significant overlap existed among the independent variables, their individual contributions would be suspect, and there would be question as to whether they were truly measuring different constructs. Prior research exploring these variables in relation to the population studied had not directly made statements asserting the presence of

overlap. However, the issue of colinearity among the variables deserved conceptual consideration.

Age had not been closely linked in the literature to the other variables considered. Ethnicity's effect on the outcome of rehabilitation may have been colinear with Educational Level as suggested by Aiduk and Langmeyer (1972). This relationship could be corrected statistically so that the true relationship between Ethnicity and Employment Status could be understood. There was no evidence that Educational Level was otherwise closely linked to other variables.

At first glance the variables of Living Situation and Ability To Get Along With Others may have appeared to be related, given the effect of social skills on each. However, many more factors other than Ability To Get Along With Others could have contributed to an individual with a psychiatric disability's decision to reside alone, with family, or with unrelated others. Some may have been the effects of the illness, financial considerations, or the availability of family or friends.

Logically it seemed that Age of Onset and Employment History could be related suggesting that individuals with a later onset of illness would have more opportunity to develop a work history. That, however, remained an empirical question given that no assertions had been made

closely relating these two variables in prior studies of this population. There was also no apparent ground for linking these variables individually with any of the other independent variables in the study. Ultimately the issue of overlap or colinearity had to be addressed and managed through the analysis. The analytical strategy chosen and follow-up analyses have taken this concern into account.

Relationship Between the Predictor and Predicted Variables

It was critical in a study in which predictive relationships were hypothesized that other factors were not artificially impacting on the predicted variable, thus giving spurious results. In this regard consideration had to be given to the role of the vocational rehabilitation counselors who were knowledgeable of the variables which were being used as predictors. Could they have selectively influenced employers' decisions about who to interview and who to hire? If such were the case, a major threat to the validity of the proposed study would have occurred, namely, that the unaccounted-for variable of counselor influence would have been more predictive of outcome than would be the variables considered in the study would have been.

However, the reality of the activities and responsibilities of the vocational rehabilitation counselors within Rehabilitation Services Administration reduced the

likelihood of such a threat. The counselors' role primarily involved the provision of assistance and resources for training or tools that would have promoted employment desired by the client. They were generally not involved with employers directly. The client sought out employment independently or indirectly through agencies or resources available to the community. The nature of employers' knowledge of vocational rehabilitation clients generally varied little from that of other applicants for the same jobs. What contact may have occurred between employers and vocational rehabilitation counselors was minimal and was done for verification purposes (e.g., to confirm the need for a set of tools requested by a client).

In addition, all cases studied had been closed, and the variables identified for scrutiny were not so noted until after the case terminations. None of the twelve counselors who had served the sample studied were aware at the time of the possibility or nature of the study. Therefore, whereas the independence of the predictor variables from the predicted may not have been perfect, it was considered sufficiently strong so as to rule out dependence as a major threat.

Method and Limitations

This study followed a correlational design using a regression strategy. Such an approach represented the

predominant method used by researchers in similar studies but with important variations. Mantonakis et al. (1982) and Aiduk and Langmeyer (1972) used the chi-square test of statistical independence to determine the relationships among the variables used. For the purpose of studying these variables in isolation with the outcome variable, such a method was useful given the non-parametric nature of the variables, but would have provided no information about the actual contribution of the combined variables to outcome.

Douzinas and Carpenter (1981), Brooks (1981), Buell and Anthony (1973), and Lorei and Gurel (1973) used multiple correlation or multiple regression techniques. With such analytic strategies, a better sense of the relative importance of each variable could be assessed. With Douzinas and Carpenter (1981) and Brooks (1981), however, the dependent variable they appeared to be using was nominal by definition and divided into two groups. The statistical technique they used was not considered appropriate with a predicted variable so described. Alharthi (1985) and Parks (1974) used Discriminant Function Analysis in analyzing their data, and Goss and Pate (1967) employed Analysis of Variance.

This study was primarily interested in identifying those variables which best predicted vocational rehabilitation outcome. Aldrich and Nelson (1984) have made

a convincing case in favor of the use of Logistic Regression Analysis over a multivariate regression model in the analysis of qualitative data. The approach is appropriate when one variable can clearly be conceptualized as depending on the others, when dependent and independent variables are categorical in nature, and when linearity cannot be assumed. This procedure studies the group of predictor variables under consideration and their combined as well as individual contribution to the predicted outcome.

Stepwise Logistic Regressions with forward selection were carried out using the BMDP-LR statistical module. The strategy proceeded as follows: All variables of interest were considered for a single analysis. The best predictive model was then formed allowing selection of the most potent predictor variables in the order of their importance according to their individual coefficient values. Interactions were allowed to enter only if main effects appeared in the model. The analysis was discontinued when the remaining variables or interactions failed to add significantly to the predictive model. The result was the "best" combination of variables or their interactions that predict the outcome variable of Employment Status.

There were a number of advantages to this analytical strategy. It controlled for multicollinearity among the predictor variables. It was well-suited for a dependent

variable that was qualitative and dichotomous in nature. This method was able to study variables as potentially explanatory entities. It took into account the possibility of interactions among the predictor variables.

Following this initial analysis, further study of those variables of interest was done. A chi-square procedure was used in this effort with the level of significance set at .05.

Throughout the analytical process the potential influence of a secondary disability was controlled. Prior studies in this area have not mentioned efforts to identify or control for secondary disabilities.

The principal limitation with these statistical methods, as exists with all correlational research, was their inability to firmly establish causal relationships. Other factors unaccounted for in this study may have been at work influencing outcome.

Data Collection

Data on the variables of Age, Ethnicity, Educational Level, Living Situation, Training, and Support were gathered from the Rehabilitation Services Administration's Case Service Report. This document was generated at admission for each client and the information needed was coded for computer use.

Data on the variables of Age of Onset, Ability To Get Along With Others, and Employment History were taken from written records maintained on each subject. A master list of the sample was used to access each record, and review of the records using the variable definitions generated the information required.

Summary

This chapter describes the sample and the population from which it came. It examined the variables used in the study and provided statements of how they were to be measured. The design of the study and the methods for data collection and analysis were presented.

CHAPTER 4

RESULTS AND DISCUSSION

The purpose of this study was to explore the relationship between selected background, social and service variables and vocational rehabilitation outcome. This chapter presents the results of the study and includes a discussion of those results. The first section reports the outcome of the primary data analysis and applies it to the hypotheses in the order they were originally stated. A restatement of each hypothesis is included with the presentation of the findings. The following sections discuss the results and the implications they have for this study.

Results

The variables of interest were analyzed simultaneously using Stepwise Logistic Regression with forward selection. The computer analysis ended when the best combination of predictor variables was statistically identified.

When no distinction was made between single vs. multiple disability, the model which best fit the data suggested that the best predictors of Closure Status were,

in the order of their importance, Training, Employment History, and Ability To Get Along With Others. The results are given in Table 1. The coefficient values that come under each of the variables reflect their strength relative to each other.

A somewhat different outcome occurred when the effect of an additional disability was taken into account, as reported in Table 2. In both situations the best predictors were, in the order of their importance, Training and Employment History. Again, the coefficient values that are noted under each of the variables reflect their strength relative to each other.

Information included in Tables 1 and 2 warrant further explanation:

The Improvement chi-square and its p-value indicate the strength of the unique contribution of each variable or term to the Model. The small p-value suggests greater significance.

The coefficient is similar to a test of the relative importance of each term to the Model. The larger value indicates a more powerful role in the outcome. The coefficient values are negative as a result of the coding system used. Their meanings are as follows: having received training, having a stable employment history, and being able to get along well with others is highly related

Table 1. Logistic Regression Results for the Effect of Predictor Variables on Closure Status Using the Whole Sample.

	Terms Entered in Best Model		
	Training	Employment History	Ability to Get Along With Others
Improvement Chi-Square and p-value	44.788 .000	18.222 .000	4.350 .037
	--	--	--
Coefficient	-1.1550	-.6458	-.3596
Standard Error	.2165	.1762	.1724
Coefficient/Standard Error	-5.334	-3.665	-2.086

Goodness-of-Fit Chi-Square
 $(2 \times O \times LN(O \div E)) = 52.694$
(Degrees of Freedom = 50) $p = .370$

Table 2. Logistic Regression Results for the Effect of Predictor Variables on Employment Status While Controlling for an Additional Disability.

1) Single Disability:

	<u>Terms Entered in Best Model</u>	
	<u>Training</u>	<u>Employment History</u>
Improvement Chi-Square and p-value	22.301 .000	5.598 .018
	--	--
Coefficient	-1.4883	-.6212
Standard Error	.4005	.2700
Coefficient/Standard Error	-3.716	-2.301
Goodness-of-Fit Chi-Square (2 X O X LN (O ÷ E)) = 31.603 (Degrees of Freedom = 23) p = .109		

2) Multiple Disability:

	<u>Terms Entered in Best Model</u>	
	<u>Training</u>	<u>Employment History</u>
Improvement Chi-Square and p-value	22.775 .000	13.609 .000
	--	--
Coefficient	-1.0062	-.8156
Standard Error	.2652	.2297
Coefficient/Standard Error	-3.795	-3.551
Goodness-of-Fit Chi Square (2 X O X LN (O ÷ E)) = 21.108 (Degrees of Freedom = 25) p = .687		

to being employed. Conversely, not having received training, having an unstable employment history, and having difficulty getting along with others is related to not being employed.

The Goodness-of-Fit or Likelihood-Ratio chi-square reflects how well the Model fits the data. A large p-value is indicative of a good fit.

Hypothesis 1: Age, Age of Onset, Educational, and Ethnic differences are related to vocational rehabilitation outcome.

The analysis found none of these variables to be effectively predictive of Employment Status. The results held despite the differential consideration of single and multiple disability conditions. The hypothesis was rejected.

Hypothesis 2: Differences in Living Situation, Ability To Get Along With Others, and Employment History are related to vocational rehabilitation outcome.

The results require separate consideration of each of the variables included within the hypothesis:

- (a) Living Situation was found to have no significant relationship to Employment Status. Its place in the hypothesis is rejected.
- (b) The results of the analysis identified Ability To Get Along With Others as an important

variable when the sample as a whole was considered suggesting acceptance of the hypothesis. However, it disappeared as a key predictor variable when single and multiple disability groups were analyzed separately. With these conditions the hypothesis is rejected.

- (c) The results clearly show Employment History to be significantly related to Closure Status, both when considering the sample as a whole and when separating the single disability group from the multiple disability group. The hypothesis is accepted.

Hypothesis 3: The provision of Training services and Support Services are related to vocational rehabilitation outcome.

The results again require separate consideration of each of the variables included within the hypothesis.

- (a) The provision of Training services came to be the most predictive variable of Employment Status from within the variable set considered. Its effect was significant under all conditions. The hypothesis with regard to this variable is accepted.

- (b) Conversely, the results showed no relationship between the provision of Support services and vocational rehabilitation outcome. The hypothesis as it applies to Support services is rejected.

Additional Results

Further Analyses of Interest

Two of the variables studied warranted special analyses. Chi-square tests of statistical independence were therefore applied to the predictor variables of Ability To Get Along With Others and Support services and their relationships to the outcome variable of Employment Status. Ability To Get Along With Others deserved special attention due to the varied results reported. The provision of Support services was considered for further analysis in recognition of its key role in the vocational rehabilitation programs now in operation.

The results of the analysis of the relationship between Ability To Get Along With Others and Employment Outcome are presented in Tables 3 and 4. The variable of Ability To Get Along With Others had a highly significant relationship with Employment Status within the whole sample as previously reported. However, it also appeared to be strongly related to outcome within the multiple disability

Table 3. Results of a Chi-Square Analysis Testing the Effect of Ability to Get Along With Others on Closure Status.

<u>Closure Status</u>	<u>Ability to Get Along With Others</u>		<u>Row Frequency</u>
	<u>Gets Along Well</u>	<u>Has Difficulty</u>	
Employed	47	31	78
Unemployed	45	85	130
Column Frequency	92	116	208

Chi-Square = 11.9748
 Degree of Freedom = 1
 p = .0005

Table 4. Results of a Chi-Square Analysis Testing the Effect of Ability to Get Along With Others on Closure Status While Controlling for an Additional Disability.

1) Single Disability

<u>Closure Status</u>	<u>Ability to Get Along With Others</u>		
	<u>Gets Along Well</u>	<u>Has Difficulty</u>	<u>Row Frequency</u>
Employed	16	13	29
Unemployed	23	42	65
Column Frequency	39	55	94

Chi-Square = 2.4707
 Degree of Freedom = 1
 p = 0.1160

2) Multiple Disability

<u>Closure Status</u>	<u>Ability to Get Along With Others</u>		
	<u>Gets Along Well</u>	<u>Has Difficulty</u>	<u>Row Frequency</u>
Employed	31	18	49
Unemployed	22	43	65
Column Frequency	53	61	114

Chi-Square = 8.5734
 Degree of Freedom = 1
 p = .0034

condition. The lack of significance within the single disability condition is consistent with the previous result.

The results of the analysis of the relationship between the provision of Support services and Employment Outcome are reported in Tables 5 and 6. The relationship was found to be significantly high within the sample as a whole and within the single disability condition but did not meet the criterion for significance within the multiple disability group. The finding of significance is in apparent conflict with the results of the Logistic Regression Analysis wherein Support services did not surface as a key variable. The explanation lies in the ability of Logistic Regression Analysis to control for colinearity among variables. Further analysis showed Support services to be highly correlated with the other independent variables which were found to be more powerful predictors.

Table 5. Results of a Chi-Square Analysis Testing the Effect of Support Services on Closure Status for the Whole Sample.

<u>Closure Status</u>	<u>Support Services</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	61	17	78
Unemployed	64	68	132
Column Frequency	125	85	210

Chi-Square = 16.7624
Degree of Freedom = 1
p = .0000

Table 6. Results of a Chi-Square Analysis Testing the Effect of Support Services on Closure Status While Controlling for an Additional Disability.

1) Single Disability:

<u>Closure Status</u>	<u>Support Services</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	23	6	29
Unemployed	25	42	67
Column Frequency	48	48	96

Chi-Square = 12.6484
 Degree of Freedom = 1
 p = .0004

2) Multiple Disability:

<u>Closure Status</u>	<u>Support Services</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	38	11	49
Unemployed	39	26	65
Column Frequency	77	37	114

Chi-Square = 3.1660
 Degree of Freedom = 1
 p = .0752

Among the Predictor Variables

In an effort to better understand the variables that demonstrated some relationship to Closure Status (Ability to Get Along With Others, Employment History, Training, and Support Services), further analyses were done among these.

Employment History and Ability to Get Along With Others were found to have a highly significant relationship: χ^2 (calc) (degree of freedom = 1) = 8.0549 (p = .0045). It suggests that those who had difficulty relating to others also had unstable work backgrounds. Subjects with stable work histories were better able to get along with others.

A similar analysis was used to test the relationship between Employment History and Support Services: χ^2 (calc) (degree of freedom = 1) = 5.6739 (p = .0172). Support Services were received by subjects with stable work histories at a greater rate than were received by those with unstable work backgrounds. No statistically significant relationship was evident between the variables of Employment History and Training Services: χ^2 (calc) (degree of freedom = 1) = 1.8433 (p = .1746).

Ability To Get Along With Others was analyzed in relation to Training Services using the chi-square procedure: χ^2 (calc) (degree of freedom = 1) = 4.5829 (p = .0323). Training Services tended to be received significantly more often by subjects who were able to get

along well with others than by those who had difficulty with others. However, a similar relationship did not exist between the variables of Ability To Get Along With Others and Support Services: χ^2 (calc) (degree of freedom = 1) = 2.2074 (p = .1373). A subject's potential for receiving Support Services was not closely related to their ability to get along with others.

Training Services and Support Services were highly related: χ^2 (calc) (degree of freedom = 1) = 43.0380 (p = .0000). Those receiving both services (n=100) numbered more than those receiving either one (n=54) or none (n=56) of the services.

Training Services and Support Services

Both the variables of Training and Support Services have been connected to some degree to Employment Outcome. A question then arises as to how each of the categories under these variables specifically relate to the variable of Closure Status. Since the data was available, exploratory analyses using the chi-square test of independence were run on each of the Training and Support Service categories with the outcome variable of Employment Status. The results are presented in Tables 7 through 16 and must be interpreted cautiously given the high probability of finding significance by chance when doing multiple analyses.

Of the Training services, those that were significantly related to employment outcome were Business/Vocational Training ($p = .0002$), Work Adjustment Training ($p = .0196$), On-the-Job Training ($p = .0085$), and Miscellaneous Training ($p = .0296$). The results of the latter two need to be considered with additional caution due to each having one cell in which the expected frequency was less than 5. The only Training service not achieving significance in its relationship with closure status was University/College training ($p = .8481$).

The Support services that were significantly related to employment outcome included Restoration ($p = .0136$) and Maintenance services ($p = .0001$). Those that were not similarly related were Placement ($p = .1687$), Transportation ($p = .6253$), and Counseling and Guidance ($p = .4760$). Again, caution needs to be used in considering the category of Counseling and Guidance in that there was a change in the method of reporting this service during the period studied. The data reflected information from the point after which Counseling and Guidance was identified as a separate and unique service.

Table 7. Results of a Chi-Square Analysis Testing the Effect of University/College Training on Closure Status.

<u>Closure Status</u>	<u>University/College Training</u>		Row Frequency
	<u>Received</u>	<u>Not Received</u>	
Employed	14	64	78
Unemployed	21	111	132
Column Frequency	35	175	210

Chi-Square = .0367
 Degree of Freedom = 1
 p = .8481

Table 8. Results of a Chi-Square Analysis Testing the Effect of Business/Vocational Training on Closure Status.

<u>Closure Status</u>	<u>Business/Vocational Training</u>		Row Frequency
	<u>Received</u>	<u>Not Received</u>	
Employed	29	49	78
Unemployed	18	114	132
Column Frequency	47	163	210

Chi-Square = 14.3174
 Degree of Freedom = 1
 p = .0002

Table 9. Results of a Chi-Square Analysis Testing the Effect of Work Adjustment Training on Closure Status.

<u>Closure Status</u>	<u>Work Adjustment Training</u>		Row Frequency
	Received	Not Received	
Employed	33	45	78
Unemployed	34	98	132
Column Frequency	67	143	210

Chi-Square = 5.4429
 Degree of Freedom = 1
 p = .0196

Table 10. Results of a Chi-Square Analysis Testing the Effect of On-the-Job Training on Closure Status.

<u>Closure Status</u>	<u>On-the-Job Training</u>		Row Frequency
	Received	Not Received	
Employed	7	71	78
Unemployed	1	131	132
Column Frequency	8	202	210

Chi-Square = 6.9302
 Degree of Freedom = 1
 p = .0085

Table 11. Results of a Chi-Square Analysis Testing the Effect of Miscellaneous Training on Closure Status.

<u>Closure Status</u>	<u>Miscellaneous Training</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	9	69	78
Unemployed	4	128	132
Column Frequency	13	197	210

Chi-Square = 4.7342
 Degree of Freedom = 1
 p = .0296

Table 12. Results of a Chi-Square Analysis Testing the Effect of Restoration Support on Closure Status.

<u>Closure Status</u>	<u>Restoration</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	39	39	78
Unemployed	42	90	132
Column Frequency	81	129	210

Chi-Square = 6.0946
 Degree of Freedom = 1
 p = .0136

Table 13. Results of a Chi-Square Analysis Testing the Effect of Placement Support on Closure Status.

<u>Closure Status</u>	<u>Placement Support</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	9	69	78
Unemployed	7	125	132
Column Frequency	16	194	210

Chi-Square = 1.8948
 Degree of Freedom = 1
 p = .1687

Table 14. Results of a Chi-Square Analysis Testing the Effect of Transportation Support on Closure Status.

<u>Closure Status</u>	<u>Transportation Support</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	19	59	78
Unemployed	27	105	132
Column Frequency	46	164	210

Chi-Square = .2384
 Degree of Freedom = 1
 p = .6253

Table 15. Results of a Chi-Square Analysis Testing the Effect of Maintenance Support on Closure Status.

<u>Closure Status</u>	<u>Maintenance Support</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	34	44	78
Unemployed	23	109	132
Column Frequency	57	153	210

Chi-Square = 15.6764
 Degree of Freedom = 1
 p = .0001

Table 16. Results of a Chi-Square Analysis Testing the Effect of Counseling and Guidance Support on Closure Status.

<u>Closure Status</u>	<u>Counseling & Guidance Support</u>		<u>Row Frequency</u>
	<u>Received</u>	<u>Not Received</u>	
Employed	12	29	41
Unemployed	14	52	66
Column Frequency	26	81	107

Chi-Square = .5080
 Degree of Freedom = 1
 p = .4760

Discussion

The aim of this study was to identify a set of variables that could effectively predict vocational rehabilitation outcome for a population with a psychiatric disability. From the outset it was determined that the effect of the presence of another disability may influence the results. Such an effort to control for a secondary disability has not been overtly considered in the literature that has similarly attempted to define predictors of successful employment outcome for this population. It is clear, however, that such an adjustment would be worthwhile in future studies.

The first variable examined was Age. In this regard no specific age or age group was predictive of vocational rehabilitation outcome. This finding is consistent with those of Brooks (1981), Loeb et al. (1974), Parks (1974), Wilson, Berry, and Miskimins (1969), and Ethridge (1968). It conflicts, however, with the assertions of Coleman (1986), Saxon, Spitznagel, and Shellhorn-Shutt (1983), Lorei and Gurel (1973), Aiduk and Langmeyer (1972), and Green, Miskimins, and Keil (1968) who suggested that younger aged individuals with a psychiatric disability have better outcomes. It also does not support the findings of Mezquito-Blanco (1984), who claimed that middle-aged subjects were better prospects. The lack of consistency in

these results indicates that the search for predictors would more profitably be directed to other more powerful factors.

With this sample Education was also found to have no predictive relationship to employment outcome. This finding is in agreement with Saxon, Spitznagel, and Shellhorn-Shutt (1983), Loeb et al. (1974), and Wilson, Berry, and Miskimins (1969), but conflicts with Coleman (1986), Katz-Garris, McCue, and Garris (1981), Douzinas and Carpenter (1981), and Lorei and Gurel (1973). The influence of the identified predictor variables may have moderated any potential differences within age and education.

A similar dynamic may be occurring with regard to Ethnicity. At a significant level White subjects were better educated than Hispanic subjects ($p = .0177$) yet there were no differences between the groups on the criteria of Employment Outcome, both when efforts were made to control for education and when no control was attempted. The findings are in agreement with those of Loeb et al. (1974). While no literature could be found addressing this issue for the Hispanic population specifically, studies of the Black or general "Non-White" populations do find significant differences (Coleman, 1986; Douzinas and Carpenter, 1981; Buell and Anthony, 1973; Lorei and Gurel, 1973; Aiduk and Langmeyer, 1972; Lorei, 1967). Again, the effects of the more powerful variables of Training and Employment History

may have been smoothing out these differences in educational level.

An obvious factor with regard to ethnicity is the differences in sample sizes of the two groups. Hispanic subjects accounted for 19% of the sample and White subjects were at 81%. The percentages, however, are not inconsistent with both census figures for the area and the estimate of the area's population of individuals with a psychiatric disability. The Government of Pima County (1985) has established the census figure for people of Hispanic background at 21%. ADAPT, Inc. (1987) is one of the agencies in Pima County responsible for providing for the care of persons with a psychiatric disability. This organization has identified 1,088 such individuals in the Pima County area of which 173 (16%) are Hispanic. The percentage of Hispanic individuals with a psychiatric disability within the sample is therefore numerically representative of the identified population. The evidence is reflective of both equal opportunity and equal accessibility for the minority population.

Another variable of interest, Living Situation, was also found to have no significant relationship to employment status. Whether a subject lived alone, lived with family, or lived with unrelated others made no predictive difference. This finding does not agree with Coleman

(1986), Mantonakis et al. (1982) or Douzinas and Carpenter (1981), who claimed that living with family did not correlate with positive outcome. The discrepancy may be a result of recent efforts to involve families of individuals with a psychiatric disability in their treatment and rehabilitation (Ferris and Marshall, 1987). Such intervention may be counteracting the childlike dependency that was speculated as being responsible for the poor outcomes with subjects living with families.

With regard to residence, a preference for living with family was seen among the Hispanic sample. A question arises based on the Douzinas and Carpenter (1981) findings in which a subject's being Black and living with their families combined for poor outcomes: Would the same occur with this ethnic group? Within this sample no significant relationship could be found between Hispanic subjects living with family ($p = .1993$) or not living with family ($p = .7533$) and Employment Status. The findings therefore do not support the position of Douzinas and Carpenter (1981) as applied to the ethnic group in this sample. Again, the efforts at education and intervention within the family system may be influencing this result.

Conflicting views on the effect of Age of Onset on employment outcome were previously discussed. Mantonakis et al. (1982) favored an older age of onset, while Saxon,

Spitznagel, and Shellhorn-Schutt (1983) claimed a younger age of onset was related to positive outcome. This study cannot support Age of Onset as being effectively associated with employment status.

The variable Ability To Get Along With Others was identified as a good predictor of employment outcome based on the statistically significant relationship with the sample as a whole and with the portion of the sample bearing an additional disability. Even with the single-disability part of the sample, an advantage could be seen for those who have the skill. This finding was in keeping with the positions of both the opinion and research literature. A strong argument exists for the investment of resources in helping individuals with a psychiatric disability to develop the social skills that underlie this ability. Such an effort is even more critical where a person has multiple disabilities.

In the primary analysis Employment History was consistently found to have a strong relationship to Closure Status. The importance of this factor as a predictor of success of vocational rehabilitation with this population is supported not only by this study but throughout the literature (Anthony and Jansen, 1984). The experience of having obtained and maintained a job in the past may offer a psychological advantage in the form of hope and confidence,

as well as the opportunity to have developed needed skills. Given the importance of this variable and the fact that chronic mental illness often develops before working age (46.9% of this sample), the need for opportunities to get work experience as part of a rehabilitation program is most important. This study encourages expanding employment opportunities for persons with psychiatric disabilities, e.g., supported employment.

The variable of Training was found to have a highly significant relationship with Closure Status with both the single-disability and multiple disability groups. Such an outcome is in agreement with Hursh and Anthony (1983), Anthony and Farkas (1981), and Douzinas and Carpenter (1981) and points to the general value of training in preparing this population for employment. Further the individual analyses of each of the categories of the Training variable with employment outcome cautiously suggested that directly job-related and skill-building activities may be more useful for a larger portion of the sample than formal education. The latter activity involves an emphasis on more long-term goals requiring an ability to postpone gratification. In addition, its setting is less like the work place and this population has demonstrated a difficulty in transferring skills between settings. Formal education, therefore, may

be less appealing and helpful to the majority of those with psychiatric disabilities.

Although the Support services variable found significance in the follow-up analyses, it did not surface as a key predictor in the primary analysis. It is suggested that the benefits of an Ability To Get Along Well With Others, a good Employment History, and Training may be more meaningful to this group than Support services. Further analysis was done on the categories of Support services testing their relationship to Employment Status. Only Restoration and Maintenance demonstrated any significance. Placement, Transportation, and Counseling and Guidance services did not meet the .05 criteria. It is suggested with some caution that restorative services addressing the mental condition and financial assistance reducing the stress of day-to-day living may be more useful for those with a psychiatric disability who are undergoing rehabilitation. Further investigation into each of these categories of the Training and Support variables is indicated, especially given the conflicting results from Alharthi (1985) and Brooks (1981).

A principal focus of this study has been to identify that set of variables which when taken together are best able to predict Closure Status or Employment Outcome. For this purpose, Logistic Regression Analysis was employed to

study all the variables of interest. The results identified two variables, Training Services and Employment History, as being the most powerful predictive entities explored in this study. When the sample was examined as a whole, a third variable, Ability to Get Along With Others, surfaced as highly related to Employment Outcome.

Why did this last variable not show up in the analysis in which the influence of an additional disability was controlled, and what happened to the relationship between Support Services and Closure Status? The answer lies in this method's ability to manage colinearity. Because Training services and Employment History were highly related to Ability to Get Along With Others and to Support services and not to each other, the two less potent variables were subsumed under the powerful influence of Training and Employment History. When the influence of an additional disability was no longer controlled, the effect for an Ability to Get Along With Others showed sufficient strength to warrant recognition in the analysis as a major contributor to outcome.

The suggestion here is clear: An individual with a psychiatric disability who received training and has developed a stable employment history while nurturing an ability to get along well with others has the best likelihood of obtaining and maintaining employment.

Promoting those for whom these factors are already in place or investing resources into developing these qualities in the lives of persons with a psychiatric disability is indicated if the goal is vocational rehabilitation. The findings are in strong agreement with related studies (Farley, Akridge, and Rice, 1986; Hursh and Anthony, 1983; Douzinas and Carpenter, 1981).

Summary

Chapter 4 was designed to report the results of the statistical analyses of data obtained through this study. A discussion of these results followed, and their relation to other findings in the field was addressed.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Vocational rehabilitation success rates have been poor among individuals with a psychiatric disability. This has continued through the years despite advances in the treatment of mental illness and in the control of its behavioral sequellae.

The Arizona State Rehabilitation Services Administration has as its main function the vocational rehabilitation of individuals with disabilities. Gradually its clientele has included increasing numbers of persons with a psychiatric disability. Other agencies which primarily exist for the purpose of serving this population have joined in the vocational rehabilitation task. Individuals with psychiatric disabilities and their families are heightening their demands for opportunities to improve their level of functioning, and this is translated into expectations for employment.

The problem exists in that, despite the growing attention and recent increase in resources, little is known about what contributes to success or failure in attempts to vocationally rehabilitate this population. More

specifically, there is a lack of research-based knowledge about what factors make a difference. To embark on such a study would be useful to service providers in carving out effective individualized programs, in identifying high-risk clientele in need of special services, and in suggesting relevant interventions.

The questions considered in this study were:

1. What is the relationship between the background variables of Age, Age of Onset, Race, and Educational Level and the variable of vocational rehabilitation outcome?

With Age, Age of Onset and Educational Level, the literature presents mixed findings. Fairly consistent results with regard to Ethnicity have suggested that White subjects have better outcomes. No studies have been found that have explored this issue in the Southwest with a large Hispanic population.

2. What is the relationship between the social variables of Living Situation, Ability to Get Along With Others, and Employment History and the outcome variable of employment?

What little investigation has been done into Living Situation has linked poor outcome with a

subject's living with family. Studies have been consistent in identifying Ability to Get Along With Others and Employment History as important contributors to eventual employment.

3. What is the relationship between the vocational rehabilitation service variables of Training and Support and vocational rehabilitation outcome?

There is a strong orientation in the literature emphasizing the need for training and ongoing support as key factors for success. Much of this is based on few studies, and there is research that offers conflicting results.

4. When taken together, which of these variables make the greatest predictive contribution to vocational rehabilitation outcome?

Research and the opinion literature suggest that Employment History and the service variables of Training and Support may be the most predictive combination of variables.

The sample of interest in this study included 210 White and Hispanic subjects from the Tucson-area offices of Rehabilitation Services Administration whose cases were closed in the years 1983 through 1987 and whose records were available. They had each requested vocational rehabilitation services. Their primary disability in each

case was a chronic mental illness. The predicted variable was Employment Status, and the predictor variables were Age, Education, Age of Onset, Ethnicity, Living Situation, Ability To Get Along With Others, Employment History, Training, and Support Services.

Stepwise Logistic Regression Analysis with forward selection was the primary statistical technique used to identify the variables predictive of outcome. A chi-square test of statistical independence was employed in follow-up procedures to further explore relationships. Throughout the analytical process, strategies were implemented to control for an additional disability.

Conclusions

The following tentative conclusions can properly be made from this study while taking into account the limitations previously described in Chapter 1.

1. Age, Education, Ethnicity, Age of Onset, and Living Situation are not definitive predictors of vocational rehabilitation outcome.
2. While Ability To Get Along With Others may not be a critical variable in the prediction of Employment Status, this skill contributes to outcome and is a key factor in the development of variables that are good predictors. Attention should be given to

nurturing this ability in individuals with psychiatric disabilities.

3. Similarly, Support services may not be a highly powerful variable independently, but in conjunction with other critical variables can serve to strengthen the potential for a positive outcome.
4. Receiving Training services is the most powerful predictor variable in this study. Individuals with a psychiatric disability who receive training have a greater likelihood of being employed. This entity should be a part of any rehabilitation program for this population.
5. A stable Employment History is the second most effective factor that is predictive of successful vocational rehabilitation. Efforts to promote this background variable by assisting this population in developing a work history could contribute and lead to eventual rehabilitative success.
6. Assuming an interest in becoming employed, an individual with a psychiatric disability who receives relevant training, has developed a stable employment history, gets along well with others, and receives some support will be an excellent candidate for successful vocational rehabilitation outcome.

Recommendations

The results obtained from the research in conjunction with the acknowledged limitations of the study support suggestions for intervention and future research.

It is recommended that:

1. Individuals with a psychiatric disability who wish to work be directed into training programs relevant to their individual goals which would promote both job-related skills and peripheral abilities, e.g., the ability to interact positively with co-workers and supervisors.

This study has underlined the value of training in the vocational rehabilitation of this population. It suggests that directly job-related and skill-building activities may be more useful for the majority of the group than formal education. In conjunction with training, a person's ability to get along with others has been found to be closely related to eventual success.

2. Employment opportunities be promoted for this population that would lead to the development of a work history; supportive services, in particular those addressing the mental condition and financial needs, should be available during this critical building period.

A stable work history has been found to be highly related to future employment--a self-fulfilling prophecy of sorts. It may contribute to a person's confidence and belief in self as a potentially desirable employee. Behaviorally, prior work experience gives an individual guidelines about what to expect and what can be expected of him/her on the job. The findings of Radin and Sands (1980) and the results of this study suggest that supportive assistance may complement and reinforce the benefits of developing work experience. Continuing encouragement is needed by an individual with a psychiatric disability to maintain focus and to persevere under stress.

3. Similar studies be initiated in other areas serving large minority populations.

Additional studies would serve to test the generalizability of the results with regard to other samples, locations, and times.

4. Future studies of this nature should distinguish among the different diagnostic categories within the construct of psychiatric disability.

While this study has reduced the diagnostic heterogeneity found in other research, further sophistication is suggested. Differences between

psychotic disorders and major affective disorders with psychotic features may contribute to differences in employment outcome.

5. A follow-up study be done with these subjects assessing differences between those who maintained their employment and those who did not.

Minkoff (1978) asserts that between 30% and 50% of this population remains employed after six months and only 20% to 30% after one year. It would be of value to explore employment rates among these or similar subjects after defined periods in order to evaluate the current relevance of those projections and the differences between subjects who remain employed and those who do not.

6. Further study be done on the categories of Training and Support services, including an assessment of the combinations utilized and their effect.

The differential impact of the various types of Training and Support services and the effect of their multiple combinations may offer additional insight into useful interventions for this population. A proper emphasis is consistently given to individualizing rehabilitation programs to meet unique needs. Knowing what aspects may be in common within successful programs would be worthwhile.

7. Research be pursued to identify counselor as well as other client characteristics that may influence outcome.

The vocational rehabilitation counselor and his/her interaction with the client can be assumed to have some effect on outcome. It would be valuable to know to what degree that influence exists and what are the counselor qualities that affect the client and his/her eventual disposition. In addition, aspects of the person with a psychiatric disability, e.g., personality variables, would usefully be studied to this same end.

8. Greater sophistication be applied to future studies of this nature in which there is control for an additional disability; a distinction could be made in the research between emotional and physical secondary disabilities.

Whether having a physical disability or an emotional/behavioral disability on top of a psychiatric disability is more detrimental to outcome is an empirical question deserving further study.

9. An exploration be done into the types of employment obtained by the subjects.

Assessing the nature of the work the sample subjects gained was not within the scope of this study. Yet such information would be useful in determining the long-range effectiveness of a vocational rehabilitation intervention. It would also give insight into quality-of-life issues that need to be addressed with this population.

Summary

Chapter 5 provided a summary of the first four chapters of the study. The conclusions resulting from the research followed, and recommendations addressing implementation and future research implications ended the chapter.

SELECTED BIBLIOGRAPHY

- ADAPT, Inc. (1987). Current statistics on the chronically mentally ill in Pima County. Tucson, Arizona: author.
- Aiduk, R., & Langmeyer, D. (1972). Prediction of client success with vocational rehabilitation in a state mental hospital. Rehabilitation Counseling Bulletin, 16, 3-10.
- Aldrich, J. H., & Nelson, F. D. (1986). Linear Probability, Logit, and Probit Models. Sage University Paper series on quantitative applications in the social sciences, 07-001. Beverly Hills: Sage Publications.
- Alharthi, S. M. (1985). The rehabilitation of clients with psychiatric disabilities: Disability and service delivery characteristics and rehabilitation outcomes (Doctoral dissertation, University of Wisconsin-Madison, 1984). Dissertation Abstracts International, 45, 2761-62A.
- American Psychiatric Association. (1980). Diagnostic and statistical manual of mental disorders (3rd ed.). Washington, DC: Author.
- Anthony W. A., & Farkas, M. (1981). The development of the rehabilitation model as a response to the shortcomings of the deinstitutionalization movement. Monograph No. One (unpublished). Boston: Rehabilitation Research and Training Center in Mental Health.
- Anthony, W., & Jansen, M. A. (1984). Predicting the vocational capacity of the chronically mentally ill: Research and policy implications. American Psychology, 39(5), 537-544.
- Arizona Department of Economic Security, Rehabilitation Services. (1986). Vocational rehabilitation information system handbook for the case service report. State of Arizona: Author.
- Brooks, W. D. (1981). Key predictors of vocational rehabilitation outcomes among clients with psychiatric disturbance (Doctoral dissertation, Western Michigan University, 1981). Dissertation Abstracts International 42, 608A.

- Buell, G. J., & Anthony, W. A. (1973). Demographic characteristics as predictors of recidivism and post-hospital employment. Journal of Counseling Psychology, 20, 361-365.
- Coleman, B. M. (1986). Psychiatrically disabled Tennessee vocational rehabilitation clientele: A three-year analysis of psychosocial and other demographic variables (Doctoral dissertation, Tennessee State University, 1984). Dissertation Abstracts International, 46, 3290-A.
- Douzinan, N., & Carpenter, M. (1981). Predicting the community performance of vocational rehabilitation clients. Hospital and Community Psychiatry, 32, 409-412.
- Ethridge, D. A. (1968). Pre-vocational assessment of rehabilitation potential of psychiatric patients. American Journal of Occupational Therapy, 22, 161-167.
- Farley, R. C., Akridge, R. L., & Rice, B. D. (1986). Interpersonal relationship skills training and employability enhancement of rehabilitation clients. Psychosocial Rehabilitation Journal, 10(1), 57-60.
- Ferris, P. A., & Marshall, C. A. (1987). A model project for families of the chronically mentally ill. Social Work, 32, 110-114.
- Goss, A. M., & Pate, K. D. (1967). Predicting vocational rehabilitation success for psychiatric patients with psychological tests. Psychological Reports, 21, 725-730.
- Government of Pima County. (1985). Special census of Pima County, Arizona. Tucson, Arizona: author.
- Green, H. J., Miskimins, R. W., & Keil, E. C. (1968). Selection of psychiatric patients for vocational rehabilitation. Rehabilitation Counseling Bulletin, 11, 297-302.
- Huck, S. W., Cormier, W. H., & Bounds, W. G. (1974). Reading Statistics and Research. New York: Harper and Row.

- Hursh, N. C., & Anthony, W. A. (1983). The vocational preparation of the chronic psychiatric patient in the community. In I. Barofsky & R. Budson (Eds.), The Chronic Psychiatric Patient in the Community: Principles of Treatment (pp. 205-239). New York: Spectrum Publications.
- Jenkins, A. E., & Amos, O. C. (1983). Being Black and disabled: A pilot study. Journal of Rehabilitation, 49(2), 54-60.
- Katz-Garris, L., McCue, M., & Garris, R. P. (1983). Psychiatric rehabilitation: An Outcome study. Rehabilitation Counseling Bulletin, 26, 329-335.
- Kerlinger, F. N. (1986). Foundations of Behavioral Research. Third Edition. New York: Holt, Rinehart, and Winston.
- Lipton, H., & Kaden, S. E. (1965). Predicting the post-hospital work adjustment of married, male schizophrenics. Journal of Consulting Psychology, 29, 93.
- Loeb, A., Kaufman, A. G., Silk-Gibran, E., & Gide, A. (1974). Factors related to retention of employment for graduates of a psychiatric rehabilitation program. American Journal of Community Psychology, 2, 165-172.
- Lorei, T. W. (1967). Prediction of community stay and employment for released psychiatric patients. Journal of Consulting Psychiatry, 31, 349-357.
- Lorei, T. W., & Gurel, L. (1973). Demographic characteristics as predictors of post-hospital employment and readmission. Journal of Consulting Psychology, 40, 426-430.
- Mantonakis, J. E., Jemos, J. J., Christodoulou, G. R., & Lykouras, E. P. (1982). Short term social prognosis of schizophrenia. Acta Psychiatrica Scandinavica, 66, 306-310.
- Mezquito-Blanco, J. (1984). Work therapy in psychiatric rehabilitation. International Journal of Rehabilitation Research, 7(1), 3-10.

- Minkoff, K. (1978). A map of the chronic mental patient. In J. A. Talbott, ed., The Chronic Mental Patient. Washington, D.C.: American Psychiatric Association, 11-38.
- Olshansky, S., Grob, S., & Ekdahl, M. (1960). Survey of employment experiences of patients discharged from 3 state mental hospitals during period 1951-1953. Mental Hygiene, 44, 510-521.
- Parks, B. (1974). Selected client characteristics and their relationship to vocational rehabilitation outcomes in a psychiatric population. Dissertation Abstracts International, 35, 287-288.
- Radin, J., & Sands, H. (1980). Post-employment services: An essential approach in the rehabilitation of the mentally disabled. Report of the Mary E. Switzer Memorial Seminar, 4, 113-122.
- Saxon, J. P., Spitznagel, R. J., & Shellhorn-Schutt, P. K. (1983). Indicators of successful vocational rehabilitation. Journal of Rehabilitation, 49(3), 69-72.
- Strauss, J. C., & Carpenter, W. T. (1974). The prediction of outcome in schizophrenia, II: Relationships between predictor and outcome variables. Archives of General Psychiatry, 31, 39-42.
- Sturm, I. E., and Lipton, H. (1967). Some social and vocational predictors of psychiatric hospitalization outcome. Journal of Clinical Psychology, 23, 301-307.
- Sultan, F. E., & Johnson, P. (1983). Factors contributing to dropout in a psychosocial rehabilitation program for the chronically emotionally disabled. ERIC document ED 233271.
- Turner, R. J., & Gartrell, J. W. (1978). Social factors in psychiatric outcome: Toward the resolution of interpretive controversies. American Sociological Review 43, 368-382.
- Watts, F. N. (1976). Modification of the employment handicaps of psychiatric patients by behavioral methods. American Journal of Occupational Therapy, 30, 487-490.

Watts, F., & Bennett, D. (1977). Previous occupational stability as a predictor of employment after psychiatric rehabilitation. Psychological Medicine, 7, 709-712.

Watts, F. N., & Bennett, D. H. (Eds.) (1983). Theory and Practice of Psychiatric Rehabilitation. New York: Wiley.

Wilson, T. L., Berry, L. K., & Miskimins, W. R. (1969). Assessment of characteristics related to vocational success affecting restored psychiatric patients. The Vocational Guidance Quarterly, 18, 110-114.