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A STUDY OF THE JOB PLACEMENT OF VOCATIONALLY HANDICAPPED CLIENTS IN A RURAL VOCATIONAL REHABILITATION FACILITY

The Ohio State University

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A STUDY OF THE JOB PLACEMENT OF
VOCATIONALLY HANDICAPPED CLIENTS IN A
RURAL VOCATIONAL REHABILITATION FACILITY

DISSERTATION

Presented in Partial Fulfillment of the Requirements
for the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By


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1983
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INTRODUCTION

This study sought to investigate selected characteristics of handicapped job seekers and to explore any relations between these characteristics and employment success.

The study is presented in five chapters. The first introduces the reader to the concept of rehabilitation, the specific problems of relating placement success to client characteristics and a definition of terms. A review of the legislative history of rehabilitation and a review of current and relevant literature follows in the second chapter along with an evaluation of the literature. A third chapter outlines and describes the methodology used. The analysis of the data is presented in the fourth chapter and is discussed in the final chapter of the study. Several conclusions are drawn based on the results of the study.
Introduction to Rehabilitation Services

The Vocational Rehabilitation Act passed in June 1920 was the beginning of a new function of government and the formalization of a new profession, that of vocational rehabilitation. The Vocational Rehabilitation Act (Smith Fess Act, P.L. 66-236) provided an appropriated sum of money to be matched by participating states. These appropriated funds would be expended on disabled individuals with non-war related injuries to assist them in overcoming handicaps to employment. Successful rehabilitation was defined as returning to one's former job or obtaining a new vocation.

The Vocational Rehabilitation Act was amended every several years up until 1973 when it was supplanted by a new act with similar provisions, the 1973 Rehabilitation Act. The process utilized in 1920 is still basically unchanged. A client, presumed to be disabled, is referred to a state employed vocational rehabilitation counselor. The counselor interviews the applicant to determine possible eligibility for vocational rehabilitation services. If the counselor needs more information than an interview yields, a specialist is called upon: a physician, a psychologist, a vocational evaluator or another specialist. Eligibility for services centers around establishing the existence of a physical or mental disability (diagnosis) and determining
that the disability is a handicap (barrier) to employment and that vocational rehabilitation services can assist in reaching a vocational goal. After eligibility is determined, an individualized rehabilitation plan is jointly developed by the vocational rehabilitation counselor and the client. The program identifies the services, costs, people responsible, time frames and expectations. All these hinge on a stated vocational goal. When the program or plan is changed in any way, it must be done in writing and with the participation and agreement of the counselor and the client.

When a client is referred for services to a rehabilitation facility, the information known about the client and an authorization for payment are sent to the facility. The facility then provides the services, constantly keeping the counselor and client updated on progress or lack of progress toward the vocational goal.

As the service plan is carried out the client moves through various statuses signalling the kind of service being provided; for example, evaluation, training, job readiness and employment (McGowan and Porter, 1967). The ultimate goal is successful placement in a job for at least 60 days. A state agency counselor may carry a large caseload depending on the type of disabilities served and the geographic area. It is therefore in the counselor's interest to share case management with a rehabilitation facility when the facility's service is appropriate to a
specific client.

Vocational rehabilitation facilities generally offer one or more of the following services: vocational evaluation, work adjustment, vocational training, job seeking skills training, placement and follow-up. Each service requires special staff, equipment and space.

Such facilities are most often managed as non-profit community service agencies from whom the state vocational rehabilitation department purchases services for a predetermined fee. In some states, at their discretion, facilities are owned and operated by the state rehabilitation department or agency (McGowan and Porter, 1967; Greenleigh, 1975).

The General Nature of the Problem

For disabled persons job placement is the ultimate goal of their rehabilitation program. Appropriate placement sets the clients on a course of vocational success and brings to a positive conclusion their rehabilitation experience. The time-worn phrase "Hire the handicapped" is imprecise. A handicap is an obstacle to some function presented by a disability or disabling condition. Whereas disability, which is the diagnosis of impairment, may not in itself be an obstacle to functioning, a vocational handicap is an obstacle or barrier to performing a job. By definition a handicapped person cannot work because of a barrier to employment. The rehabilitation facility is,
rather, asking an employer to hire the rehabilitated client. The rewards from successful placements for the facility are not only heartening but can also lead to the enhancement of the facility's reputation of good service leading to additional or more frequent referrals from various agencies.

Great pressure is placed on the shoulders of facility placement specialists. They must get to know the client during the client's rehabilitation program, take the recommendations of the rehabilitation staff and fashion this knowledge into the appropriate job for the client. Many extraneous factors affect the job market: the types of jobs available, the utilization of time, employers' attitudes—negative and positive and the unexpected.

The actual placement process is simple in the telling, difficult in the doing. Once a client is referred to the placement program out of Job Seeking Skills Training by way of vocational evaluation, work adjustment, vocational training or, sometimes, directly with no other service needed than selective placement, the placement specialist writes a placement plan. The plan incorporates the recommendations from the referring counselor and the staff reports of the other programs and sets some placement goals. This is done in participatory fashion with the client assisting. The placement process may include contacts with the employer, on-the-job training, taking civil service examinations, conducting a job campaign, coaching the
client, dealing with the client's remaining disabling conditions, job analysis or job engineering to fit the worker qualifications to the job requirements.

Some clients may be asked to begin a search on their own through newspapers and phone calls, reporting back to the placement specialist periodically. Other more limited clients may need to be "walked through" a job search and physically taken to a job interview. After the job placement plan is written and agreed to by both the placement specialist and client, the plan is set in motion, culminating with successful or unsuccessful job finding and periodic follow-up. Successful placement is defined as 60 days on the job.

During the placement process it is important, if not necessary, to be able to predict at least probable success. Employers and clients are not simply looking for placements, but appropriate ones. Placement specialists want to use their time well.

Statement of the Problem

This study begins with two preliminary questions: (1) Is placement or salary level at placement related to a client's sex, severity of handicap, type of disability, or age, or to some interactive combination of these variables? (2) How does a rural setting with a depressed economy, poor education and limited opportunity effect placement success?
The problem is to answer these questions so as to discover the relationship and to show that even in a depressed setting, successful placement of disabled persons is a viable goal.

Research Questions

The specific research questions addressed in this study were:

1. What is the relationship between successful job placement and the vocationally handicapped person's sex, severity of handicap, type of disability or age in a rural setting?

2. Within this same rural setting, is it possible to relate successful job placement to any combination of the variables sex, severity of handicap, type of disability or age interacting with one another?

3. How is salary level of clients associated with any or all of these variables in this setting?

These questions were addressed in a rural setting in Southern Ohio using archival data on 184 closed cases of disabled clients. Data were collected on these clients from program evaluation statistics recorded within a rehabilitation facility serving those clients.
Need for the Study

Each year vocational rehabilitation facilities in this country provide around $500 million worth of services to over 200,000 handicapped individuals. These facilities range in size from very small (two or three professional staff) to very large (several hundred staff members) (Greenleigh, 1975). They are found in cities and towns, in urban and rural settings. The vocational rehabilitation process starts at referral and intake and begins the individualized programming through the necessary elements of vocational evaluation, work adjustment, vocational training, job-seeking skills training, job placement and follow-up.

FIGURE 1
The Vocational Rehabilitation Process
While rehabilitation professionals have been using fundamentally the same process for over 60 years, and they have met with substantial success, some relationships within the process are not completely understood. It has been assumed, for instance, that demographic traits such as age, sex and type of disability are associated with job success (Dunn, 1974). One might even see them as predictive of success or failure in employment (Usdane, 1974). As a matter of fact, when the 1973 Rehabilitation Act was passed with its demand for greater attention to the needs of the severely handicapped (P.L. 93-112), there was great concern about how expensive the service would be, how long it would take and how difficult it would be to obtain employment for the severely handicapped.

The number of successful placements did steadily decrease in 1974 and the ensuing years after the act was passed but the difference was less one of degree of handicap than degree of service. The vocational rehabilitation program had, to some extent, become a "numbers game" in the late 1960's and early 1970's, where the "cheap placement" of marginally handicapped persons had become common practice (LaVor and Duncan, 1976).

The 1973 Rehabilitation Act called for quality service to the severely handicapped. If quality rehabilitation services are provided to a well-motivated client, do the sex and age of the handicapped person relate to rehabilitation success? These variables may or may not be related
to successful placement. It was one purpose of this study to look at the effect of these client traits on the placement of handicapped persons in the job market.

This area of rehabilitation outcome was studied in Wood County, Wisconsin. The study was performed before the promulgation of the 1973 Rehabilitation Act, yet, it took place in a rural setting (Wright, 1969; BRIEF, 1970; and Reagles, 1970) and is therefore relevant. There is a need to begin to study outcome after the 1973 Rehabilitation Act became law and perhaps an even greater need to study outcome in a rural setting (Myers, 1974; Lowery, 1980; and Cook, et al., 1981). The rehabilitation process is, after all, outcome oriented. Congress mandated in 1973 that it remain so with presumably the toughest population with which to achieve placement. It has also been stated by Lowery (1980) that rehabilitation has been developed and nurtured, as have been many other disciplines, in an urban setting. His thesis is that we are more sure the process works in an urban setting than in a rural one. Therefore this study examined outcome within a rural setting.

A Priori Limitations

Placement, measured by a dichotomy, either success or lack of success, is a complex behavior yet it is a quantitative rather than a qualitative measure. It is a limitation of this study that it does not deal with the type of
job, the appropriateness of the placement in line with the person's skills and training and other such qualitative variables.

The traditional, standard, 60 days-on-the-job measure of placement success is not the ideal. Longer measures are certainly desirable, but extremely time consuming and costly.

Lastly, this is a study of one facility, even though it is of two full years of experience and the process may be generalizable across time and geography, it represents only a handful of professionals working with only 184 people. Yet it is a sample worth looking at because it represents a cross section of disabilities and age groups and is a fresh look at a rural, poor, handicapped population and their experience with job success. It is also worthwhile because the facility seems to have an adequately qualified and professionally trained staff, because the planning seems to have been well-done and because the facility staff had been providing seemingly adequate service for a period of several years.

What emerges from this study is a set of questions about relating client characteristics to placement success. It may be that measures are needed based on those traits which are not always known or taken into account about clients such as work history, status in the community, motivation, family values, attitudes toward work and quality of service provided.
Definition of Terms

Disability. A condition of impairment, physical or mental, having an objective aspect that can usually be medically or psychologically described (Atkins, 1982).

Handicap. The cumulative result of the obstacles which the disability poses between the individual and his or her acceptable functional level (Hamilton, 1950; Atkins, et al., 1982).

Job Placement Services. The services provided to assist individuals to identify, obtain, and/or maintain employment commensurate with their vocational, social, psychological, and medical needs and their abilities. In addition, services are made available to employers to facilitate the successful employment of handicapped individuals (CARF, 1980).

Job Placement Specialist. The individual(s) with placement skills having primary responsibility for planning and/or providing job placement services to clients (CARF, 1980).

Rehabilitation. The process of providing in a coordinated manner those comprehensive services deemed appropriate to the needs of a disabled or handicapped individual, in a program designed to achieve objectives of improved health and welfare with the realization of maximum physical,
social, psychological, and vocational potential for useful and productive activity (CARF, 1980).

**Rehabilitation Facility.** A distinct organizational entity, either separate or within a larger institution or agency, which provides goal-oriented, comprehensive and coordinated services to individuals designed to minimize the handicapping effects of physical, mental, and social disabilities; and to effect a realization of the individual's potential (CARF, 1980).

**Severe Handicap.** An obstacle created by a physical or mental disability which is deemed by federal criteria set down in regulation to be classifiable as profoundly limiting to one or more physical or mental functions or an obstacle caused by any of a list of nearly twenty disease or impairing conditions set down in the 1973 Rehabilitation Act as amended. (See Appendix A.)

**Vocational Rehabilitation.** The process of assisting a disabled individual to achieve his or her maximum vocational potential consistent with the person's skills and abilities (Atkins, et al., 1982).
II. REVIEW OF LITERATURE

In this chapter the relevant literature is reviewed. First the legislative history of the rehabilitation program is recounted. Subsequent are sections on placement, the severely disabled, employer attitudes, salary levels of the disabled, rural rehabilitation and outcome studies.

Legislative History and Basis

In order to undertake an exploration of any aspect of the vocational rehabilitation of handicapped persons it is necessary to discuss at some length and depth the legislation underlying rehabilitation services and therefore the basis for referring to people as severely or non-severely handicapped. As a matter of fact, the term "handicapped" derives its meaning from these legislative provisions (P.L. 93-112, 1973).

The Rehabilitation Act of 1973 (P.L. 93-112) was signed into law by President Richard M. Nixon on September 26, 1973. Public Law 93-112 was meant to replace the Vocational Rehabilitation Act which had been the authorizing piece of legislation for the Vocational Rehabilitation Program since 1920. Until 1973 the Vocational Rehabilitation Act was continuously amended for two or
three years at a time.

The Vocational Rehabilitation Program is one of the oldest programs providing services to individuals in the United States. It had its start when President Wilson signed the Smith-Fess Act in 1920. Congress later appropriated $750,000 for the program for fiscal year 1921. (Compare with nearly $1 billion annual currently.) The Smith-Fess Act was referred to as the Civilian Vocational Rehabilitation Act to distinguish it from the existing and successful Soldiers Rehabilitation Act. This Act provided funds and authorization for the states to offer vocational guidance, vocational education, occupational adjustment and placement assistance to eligible disabled clients (Filmer, 1980). Eligible persons were those who had physical defects or infirmities whether congenital or by accident or disease and who were totally or partially incapacitated for paid work.

The fifty-three year history of the Vocational Rehabilitation Program was one of expansion and enrichment. The basic State program of services remained the same over that entire period: an allocation of funds was made annually to states according to population, with expenditures authorized at first on a 50/50 matching basis. More generous federal percentages came later. The funds were to be used to provide vocational guidance, training, occupational adjustment, prosthetics (e.g. artificial limbs) and placement services.
While other populations and other services were added over the ensuing 53 years, the 1973 debate in Congress would be a crossroads of two important items: (1) renewed vigor in serving the severely handicapped and (2) serving handicapped and disabled persons without apparent vocational goals.

Proponents would win on the first of these but their cause was weakened by a 1972 veto by President Nixon on the second. Provision of services under this Act to handicapped and disabled persons without vocational goals would not be possible until November 6, 1978, when President Carter would sign the 1978 Amendments to the 1973 Rehabilitation Act (P.L. 95-602), which would contain Title VII, a program of comprehensive services for independent living to assist handicapped and disabled persons to care for their own daily living needs to the greatest extent possible.

The Rehabilitation Act of 1973, it will be noted, omitted in the title for the first time the word "vocational." Whether this was done to signal a broadening of the scope of the legislation or, as some say, simply an error by the typist is still not clear.

This is known: the rise of the consumers in this movement began in earnest in the early 1970's. There had of course been consumer reaction in all areas of American politics and public life. The Nation had just come through a half decade of civil rights fruition for minorities of color. Disabled people, too, were demanding their rights,
better service, some voice in how that service was provided and a continuum of programming beyond merely vocational rehabilitation.

An early draft of the new law-to-be passed both Houses in 1972. President Nixon vetoed Title II of that bill which contained provisions for comprehensive rehabilitation programming. The State-Federal program, without authorizing legislation, would function by way of a continuing resolution until the passage in September of 1973 of the new law. The new law would not contain a Title II which provided for comprehensive rehabilitation services. Comprehensive rehabilitation implies the inclusion of services to handicapped persons who have no vocational goal. Comprehensive services are distinguished from vocational services which are more narrow in focus and scope because they are limited to services related to a client's vocation only and only to clients with such a goal.

But there was even wider controversy over the entire basis of the program which can be understood from a spirited hearing on August 3, 1973 before the Select Subcommittee on Education and Labor of the House of Representatives. The Subcommittee entitled the hearing "Future Directions of the Rehabilitation Services Administration" as they considered what was then a Bill numbered H.R. 8070.

The Rehabilitation Services Administration (RSA) is the Federal agency which oversees and administers the State-Federal rehabilitation program. Currently RSA is
within the newly created Department of Education. In 1973 it was in a Health, Education and Welfare Department agency called Social and Rehabilitation Services (SRS).

In the August, 1973, hearing, a document surfaced, now referred to as the "Morrill Memo," which had recommended as an alternative to vocational rehabilitation services the "cashing out" of the program. Morrill, representing the policy-making branch of SRS, suggested that a handicapped person might do as well, if not better, to simply go and buy the services he or she needed in a kind of blank check arrangement with the Federal Government. The case management and individualized aspects of rehabilitation services would be gone (Select Subcommittee, 1973).

Congressman Brademas of Indiana, Chairman of the Select Subcommittee, said in the hearing, "I think . . . that when the word goes out across the United States that the present administration . . . is proposing the dissolution of the vocational rehabilitation program, you are going to get a profound—and it is going to be adverse—reaction to this effort" (Select Subcommittee, 1973, p. 39).

What is the Rehabilitation Act of 1973? It is a law with five titles: Title I defines the scope and purposes of the basic State-Federal program of vocational rehabilitation. It emphasizes the need for services to those with the most severe handicaps. It authorizes appropriations to all fifty States and the Territories for an 80/20 match
of monies for rehabilitation services to those who meet the following criteria: a) that the person be physically or mentally disabled, b) that the person's disability be a handicap to employment and c) that there be a reasonable chance that rehabilitation services will help the person overcome his handicap and help him or her become employed.

It is also mandated in Title I that an individualized written rehabilitation plan be prepared for each client. An interesting sideline of Title I is part D. Sec. 130 which authorizes a special study of comprehensive service needs. This part of the law was placed into the bill instead of the old Title II which President Nixon had vetoed in the previous year. The theory was that if you could not legislate comprehensive services, you could at least do a study of those service needs. The study would be completed in 1975 by the Urban Institute, a Washington-based consulting firm.

Title II of the Act authorizes research and training and the funding of several research and training centers around the country to study various aspects of service delivery and physical restorative techniques. The centers are also charged with conducting training in the findings of that research.

Title III is the "facilities section." It spells out the relationship of the public rehabilitation program to the rehabilitation facilities, most of which are private, not-for-profit corporations.
Title IV is entitled "Administration and Program and Project Evaluation." This was the harbinger of the age of accountability. For so many years prior the vocational rehabilitation program was exempt from evaluation of any depth because of its built-in accountability. The total number of persons placed in jobs was a figure which was constantly on the record and, as a matter of fact, on the increase. Congress was now saying, serve the more severely handicapped who may even be people you turned away in former years as too handicapped to be rehabilitated. Now you must serve them and be accountable for service, not merely for numbers of successful rehabilitations. Rehabilitation was one of the early entries into the program evaluation movement.

Also within the Title a sheltered workshop study was authorized. Senator Humphrey had wanted a federal subsidy to be given outright to severely disabled sheltered workers or to the workshops as is done in some states. The accepted compromise, much like the one on comprehensive needs, called for a study. It would later be known as the Greenleigh Study after the firm which conducted it for Congress (1975).

Title V would later be referred to as a Bill of Rights for the disabled. It provided for private business and public agencies a mandate for hiring disabled people on equal ground or suffer the loss of federal funds. Sections 503 and 504 of Title V were specific to the
private and public sectors respectively and mandated in each case affirmative action and lack of discrimination in hiring disabled persons. Each had sanctions which called for the loss of any federal monies coming to the agency or company if the rules of Title V were not adhered to by them.

With the passage of this law, rehabilitation had its first new authorizing legislation in 53 years and was set on a new course. The major provisions of this Act called for emphasis on the most severely handicapped in providing service.

Implementation of the New Act

Two problems of implementation were evident at the outset. First, the Rehabilitation Services Administration would take a great deal of time in the rulemaking process. Regulations pursuant to the Act of the basic State Program were not published until December 5, 1974 (Federal Register, 1974). Recall that the law was signed more than a year before that. The State rehabilitation agencies were foundering in a sea of ambivalence. They wanted to follow the new Act but were unsure as to a course to pursue without accompanying regulations. Second, regulations for Section 503, the private employment mandate in Title V, were weaker than some had hoped. Rules for Section 504 (public sector employment) waited until the next administration to be published in final form (Federal Register,
State Directors of Rehabilitation were afraid of an all or nothing at all approach. They felt that over emphasis on severely handicapped would force them to overlook the less severely handicapped whom they were also mandated to serve (CSAVR, Memoranda, 1975).

The following provides an examination of the way the public State-Federal vocational rehabilitation program works. Every State and Territory has a vocational rehabilitation program which is statewide and is a part of state government. It can be housed within a department of education or employment security. Often it is a mini-umbrella agency as it is in the state of Ohio. It must, however, be a single state unit responsible to an identifiable state director with a staff whose task is essentially vocational rehabilitation in nature. Often there is (in about 40 states) a separate agency for the blind; sometimes the blind are served within the general rehabilitation agency (C.S.A.V.R., 1982). In any case these general rehabilitation agencies and agencies for the blind are all funded (80/20) and regulated by the Rehabilitation Act of 1973 as amended.

These state agencies employ vocational rehabilitation counselors. The counselors are the main service delivery professionals in the system. They write the individualized plan, provide vocational counseling, purchase testing, determine feasibility for services, provide for other
services and/or training and eventually perform job
placement and follow-up services. Successful clients are
those who reach employment at a competitive level, shel­
tered level (i.e. earn less than the federal minimum wage),
are unpaid family workers or successful homemakers. The
last two categories simply recognize work that is not
outside the home as valid pursuits. An example of an
unpaid family worker is a young retarded person who could
work on the family farm or care for younger siblings. A
successful homemaker rehabilitant might be a woman who,
after losing her sight, would become able once again to
cook and clean and care for her family and their home.

Title II of the law is implemented in various research
and training activities throughout the country. There are
graduate training programs for rehabilitation counselors
and other professionals. Twenty-two research and train­
ing centers are scattered around the country based in
universities with a track record of success in a specific
subspecialty of rehabilitation (R.S.A., 1977). Other
activities are short-term training, project research and
rehabilitation engineering activities.

Title III is implemented in the many programs within
rehabilitation facilities. The public program spends
25 to 30 percent of its case services funds in public and
private facilities (Greenleigh, 1975). States such as
South Carolina and Arkansas have mostly publicly admin­
istered facilities. Others like Ohio and Michigan have
only a few or no public facilities and therefore depend on private, non-profit rehabilitation centers.

Private rehabilitation centers are large or small, parts of larger corporations or free-standing and one-of-a-kind. Facilities largely perform services for clients already accepted as eligible for service by the vocational rehabilitation counselor. These services might include vocational evaluation, work adjustment, special services for specific disabilities such as blindness and deafness, skill training and often assistance with job placement.

The Commission on Accreditation of Rehabilitation Facilities (CARF) and the National Accreditation Council (NAC) are the accrediting bodies for rehabilitation facilities. Many public state rehabilitation agencies do not purchase services from facilities who are not accredited by CARF or NAC.

Title IV, the accountability title, generated nine standards by which state agencies could monitor their work. At this writing the standards are still far from being the benchmarks they were meant to be. One of the two studies mentioned earlier and spawned by this legislation was the Urban Institute study of 1975 on the comprehensive needs of handicapped people. The study's major revelation was that there are some 10 million Americans, far more than anyone had imagined, who are severely handicapped. It further stated that these ten million could
all benefit in some way from comprehensive services. A comprehensive services provision did not come until the 1978 amendments to the Act.

The other major study provided for was the Greenleigh Study of Sheltered Workshops and Rehabilitation Facilities (Greenleigh, 1975). Its major finding was that workshops and facilities are most adept at "problem reduction" for their handicapped clients and employees.

Title V, the civil rights piece of the law, has revolutionized our thinking as a society. Employers, public and private, may not discriminate in their hiring practices on the basis of disability. Curbs are cut to access wheelchairs, braille numbers are placed on elevators, interpreters for the deaf are seen at meetings, buses and rail carriers are becoming accessible. Accessible housing is slowly becoming a real choice.

Perhaps no eloquence can match the wording of Section 504 itself: "No otherwise qualified handicapped individual in the United States . . . shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance" (P.L. 93-112, 1973). This became the hallmark for specific states to follow in their own state laws and even for other countries.

Perhaps the appointment in 1976 of Mr. Roberts as the Director of the California State Rehabilitation
Program was a benchmark in the law's implementation. Mr. Roberts is a quadraplegic who needs an electrically assisted wheelchair and portable mechanical lung wherever he goes. Twenty years ago he would have had no choice but to be living in a nursing home. In his years as a young adult he was refused services by the California agency because he was considered too severely handicapped. Now, with only the assistance of an attendant, he travels independently, lives independently, was recently married, has fathered a son and runs the very agency which years before refused him services.

The 1973 Rehabilitation Act is a sign of our changing times. It is far-seeing, open-ended and places service decisions in the hands of professionals. It has an ear to consumers and their needs; it provides for quick appeal of any services decision all the way to the RSA Commissioner's office.

Rehabilitation has remained in place over the years because of its universal appeal. Physical or mental disability strikes every family at one time or another in some way. Therefore legislators and other public decision makers can see a large part of their constituency as well as their own families benefitting. There is a phenomenon which is often intended, but not always fulfilled: direct assistance through the application of public funds.

Both political parties tend to be supportive of vocational rehabilitation. To those who push for adequate
human services to the underemployed and unemployed, it is meaningful; to those who wrangle for workfare instead of welfare, it fits in to that philosophy beautifully. Vocational rehabilitation is neither a giveaway program nor a welfare program. It is structured to help people who have handicaps overcome those barriers so that they can get a job, support themselves and control their own destiny. The Oriental proverb applies, "Give a man a fish and feed him for a day; teach a man to fish and feed him for a lifetime."

The refreshing element in the research of this law is the intimate knowledge, appreciation and interest the Congress shows for the program and its value to our citizens. An example of this fiery interest is this quote from Congressman Brademas at the August 3, 1973 Hearing: "I for one am not going to sit here and allow this . . . administration to destroy this enormously important program to help make life better for millions of human beings in the United States . . . (T)his program is just too important to too many people" (Select Subcommittee, 1973, p. 54).
Placement

Usdane (1976) stated that placement was the least implemented area professionally within the vocational rehabilitation process. He made this statement shortly after Dunn (1974), in a review of placement practice and research over the previous several years, had evaluated the state of the art of placement as poor. To the contrary, Vandergoot and Swirsky (1980) concluded from their study of the field that job placement practice was very strong and effective. Even though several notable events took place in the second half of the decade of the 1970's, it is unlikely that the professional practice changed that dramatically in six years. Rather, it seems simply that there were contradictory findings or opinions.

The notable events were these: several degree programs in job placement were begun at major universities; the Commission on Accreditation of Rehabilitation Facilities (CARF) had established standards for job placement within its standards manual (CARF, 1976); and the principles of the Projects with Industry program, developed by Usdane (Research Utilization Laboratory, 1978), had become a solid part of the 1978 amendments to the 1973 Rehabilitation Act.
Zadny (1977) states that despite the importance of job placement in vocational rehabilitation, research on technique is scarce. Instead, Zadny says, the literature is limited to advice on selective placement that has not changed substantially over the past 30 years.

Zadny also discusses the merits of job seeking skills and job search methods. He favors job search rather than selective placement for clients who are capable of participating in job search programs.

Job seeking skills programs have proved effective over the years. They are small group (5 to 8 persons) sessions usually of one week's duration to teach clients interviewing techniques, job application procedures and job finding methods. The efficacy of this technique is clear in the work of several authors (Doane and Valenti, 1977; Ugland, 1977; Galassi and Galassi, 1978; and Godley, 1979).

The job search, Zadny mentions, is best embodied in a rather new concept called the "Job Club" (Azrin, et al., 1975; Ugland, 1977; Azrin and Philip, 1979; Salomone and Rubin, 1979; Wegman, 1979; and Azrin and Besalel, 1980). The Job Club is a technique where clients develop a highly structured job search. The "buddy system" is used while clients make "wholesale" inquiries about job opportunities and position openings. Clients are supportive of one another and share experiences and information. They are under the supervision of a job club facilitator who
oversees their progress and assists their self-directed inquiries.

In some contrast to the job search and self-directed techniques are the more traditional ones characterized by selective placement by a placement specialist. The placement specialist makes the contacts with employers and is very directive in assisting the client to get the right job suited to his skills and abilities based on the evaluation findings and training within the client's rehabilitation program (Botterbusch, 1978; Hansen and Menz, 1979; Berven and Maki, 1979; and Czerlinsky and Coker, 1980). The placement specialist's role is the subject of a significant amount of writing in the field (Echols, 1972; Newnam, 1973; Usdane, 1974; Flannagan, 1977; Minton, 1978; Bitter, 1979; Medvene and Akabas, 1979). A most complete work on the role of the placement specialist is the monograph by Wehman (1981).

These authors expound on the more traditional view of the placement specialist as a well-prepared professional who writes placement plans for clients; does job development with potential employers and the community; teaches job seeking skills; and makes specific employer contacts on behalf of clients. Placement, in their view, is an individualized process based on the client's rehabilitation program recommendations.

Still unsettled is the question of whose task it actually is to place the rehabilitated client. One of the
most thorough studies ever undertaken concluded that "workshops which are relied upon for evaluation and training and which have the professional staff to deliver such service do have a more effective placement service." (Presumably compared with facilities and workshops who do not have such professional staff.) (Greenleigh, 1978, p. 341.)

Porter, Rubin and Sink's survey (1979) concluded that job development, job analysis and placement comprise at least the second most important group of competencies (after counseling competencies) needed by vocational rehabilitation counselors. Clements (1979), speaking from a facility point of view, assumes that a great deal of placement is performed by rehabilitation facility staff.

It is probably true to say what tradition has held from its beginning—placement is everyone's task in the rehabilitation profession to one extent or another. It is certainly the shared responsibility of the clients, the referring counselor and the placement specialist if one is available.

Placement of the Severely Disabled

Of concern to all rehabilitation researchers is the question raised earlier: Is it more difficult to place or find employment for the more severely disabled client? There is no clear cut answer in the literature to that question. It has been a major subject of research interest
only in the past few years (Twomey, 1975; Watson, 1975; Seybold, 1977; Taylor and Lichtenstein, 1978; Perlman, 1978; Wehman and Hill, 1980), although Rusk (1963) did deal with it to some extent before the 1973 Rehabilitation Act.

The authors are more willing to say how to go about serving more severely disabled clients rather than to declare that placement is more difficult. They also struggle with the generic nature of the "severity" nomenclature which makes definitive conclusions difficult.

Employer Attitudes

Whenever the subject of placement of disabled people is raised, that of employer attitudes is also of interest (Lee and Rota, 1959; Hartlage and Taraba, 1971; Austin, 1972; Williams, 1972; and Smith, 1981). Employers' behaviors have altered to some extent over the years; they tend to be especially sensitive to legislative mandates such as Title V of the 1973 Rehabilitation Act which threatens with federal sanctions if disabled people are discriminated against in hiring. The actual attitudes of employers and persons-on-the-street are very slow to change. Often they can find a reason to discriminate if they really want to do so.
Placement Bibliographies

Several well-organized bibliographies of placement-related literature are available. N.A.R.I.C. (1980) and Fry and Menz (1982) give key subject areas in an annotated bibliography. Vandergoot, et al. (1979) provide the most complete compendium. It is arranged into the various stages of career development. One of the earliest of these is that published in 1970 by the New York City Central Labor Council. Others are by the Center for Studies in Vocational and Technical Education (1975), Field and North (1979) and Kowle (1979).

Salary Levels of Disabled

One writer (Walls, 1982) found severely disabled males starting at a higher wage than non-severely disabled males. His response to the finding was that the dichotomous classifications of severe vs. non-severe based on medical categories may not measure limitations as well as a precise determination of functional handicap might do (pp. 44-45). In addition, his severely disabled population were all those returning to work in forfeiture of financial or in-kind benefits from other agencies as a result of disabling conditions. It requires a higher salary to return to work and lose benefits than if one had no such "rewards"
not working. Walls also reports that sex, age, disability condition and education level were not related to closure.

An aspect which has always been found to be significant in relationship to salary level is the person's sex. This is not without support in the literature. It has been true among the general population for as long as statistics have been recorded. Women employed outside the home earn about 60 cents for every dollar earned by their male counterparts. In 1955 it was a 64 cents to a dollar ratio. As of 1979 women comprised about 42 percent of the paid labor force (Harris, 1981).

Except for beginning engineers and new bachelor's level chemists employed by industry, women's salaries are lower than those of men with comparable training and experience at every age, every degree level, in every field, and with every type of employer (Vetter and Babco, 1980). Fully employed women high school graduates have less income on the average than fully employed men with less than eight years of schooling (Lynch, 1973). In 1977 the median income of female college graduates including those with advanced degrees who worked full time, year round, was below the median income of male high school dropouts (Barrett, 1979). Regardless of the criterion chosen, age, education or prior work experience, women in each category earn far less than men with the same characteristics, even when they work the same number of hours (Barrett, 1979).
Statistics from the Federal government indicate that rehabilitation programs are much more successful with men than with women. Women who found jobs were trained for less skilled and lower paying work. While ten percent of the male population studied earned over $200 per week, only slightly over two percent of the women did as well (Brown, 1981).

Table 1 shows some significant differences between males and females in annual earnings. Notice that while almost 50 percent of males make $15,000 or more, over 50 percent of females make less than $10,000 annually.

### TABLE 1

<table>
<thead>
<tr>
<th>Annual Salary</th>
<th>Men</th>
<th>Women</th>
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<tbody>
<tr>
<td>$5,000 or less</td>
<td>5%</td>
<td>12%</td>
</tr>
<tr>
<td>$5,000 - $6,999</td>
<td>6%</td>
<td>19%</td>
</tr>
<tr>
<td>$7,000 - $9,999</td>
<td>8%</td>
<td>22%</td>
</tr>
<tr>
<td>$10,000 - $14,999</td>
<td>32%</td>
<td>35%</td>
</tr>
<tr>
<td>$15,000 - or more</td>
<td>48%</td>
<td>10%</td>
</tr>
</tbody>
</table>

(From: Barrett, 1979.)

Table 2 is a detailed breakdown of the percent on the dollar that females earn as compared with males. Table 2 shows that females have generally declined in comparison with the male wage scale over some twenty years.
The top line showing a comparison of females' to males' wages among all workers shows a slight but steady decline of females' median earnings.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>All Workers</td>
<td>63.3</td>
<td>60.7</td>
<td>59.9</td>
<td>59.4</td>
<td>58.8</td>
</tr>
<tr>
<td>Professional and Technical</td>
<td>62.4</td>
<td>61.3</td>
<td>65.2</td>
<td>64.1</td>
<td>65.9</td>
</tr>
<tr>
<td>Teachers, Primary and Secondary</td>
<td>N/A</td>
<td>75.6</td>
<td>79.9</td>
<td>79.5</td>
<td>83.0</td>
</tr>
<tr>
<td>Managers and Administrators</td>
<td>59.1</td>
<td>52.9</td>
<td>53.2</td>
<td>54.6</td>
<td>56.7</td>
</tr>
<tr>
<td>Clerical</td>
<td>71.7</td>
<td>67.6</td>
<td>67.2</td>
<td>64.0</td>
<td>62.2</td>
</tr>
<tr>
<td>Sales</td>
<td>41.8</td>
<td>40.9</td>
<td>40.5</td>
<td>42.7</td>
<td>38.9</td>
</tr>
<tr>
<td>Operatives</td>
<td>62.1</td>
<td>59.4</td>
<td>56.6</td>
<td>58.4</td>
<td>56.1</td>
</tr>
<tr>
<td>Service (non-domestic)</td>
<td>55.4</td>
<td>57.2</td>
<td>55.4</td>
<td>55.6</td>
<td>57.1</td>
</tr>
</tbody>
</table>

(From: Barrett, 1979.)
When women are disabled the problems are equally great or greater. Thurer (1982) states that disabled women are much less likely to have paid employment than men and that the weekly wage of employed disabled males averaged 79 percent that of nondisabled males while the ratio for females was 74 percent.

Disability policy in the United States was originally tailored to the needs of formerly working males. Only later were individuals with more tenuous ties to the labor market (i.e., females) included. Even today, women receive not only fewer but also less generous benefits from the major programs—disability insurance, supplemental security income, workers' compensation, and vocational rehabilitation. Since eligibility for benefits includes participation in the labor force for a prescribed period of time, and since disability insurance benefits correlate with earnings, women in a sense are punished for having been unpaid homemakers prior to the onset of disability. Conversely, women are overrepresented under supplemental security income, which is a public assistance program that supports disabled individuals below the poverty level. (Thurer, 1982, p. 195.)

Women placed successfully out of the vocational rehabilitation program made substantially lower mean salaries than did men in fiscal year 1976. The average weekly wage that year for placed men was $112 and for women $63.

According to Vash (1982) about 8.5 million women report work disabilities and such disabilities have more negative effects on women's employment than they do on men (p. 198). Vash also points out that disabled women make lower wages than do disabled men.
Rural Rehabilitation

Seldom in the placement literature is the specific topic of placement in a rural setting addressed. The business of rural rehabilitation in general is only rarely studied (Cook, et al., 1981). Cook states that the importance of understanding the needs of the rural disabled has been documented. He cites the Secretary of Agriculture's report to Congress which indicates that relevant data are not available about the rural disabled (Knebel, 1977, pp. 59-60).

Lowery's work can provide a starting off place for the subject of rural rehabilitation. One-third of the population in the United States live in rural areas. Two-thirds live in cities on three percent of the land. Fifty percent of the population live in eight of the fifty States (Lowery, 1980). Rural America is no small topic for discussion. Urban America has imported rural music and exported city ways (Weller, 1965; Appalachia Kentucky Project, 1969; and Cook, 1981). Rural people of the lower socioeconomic level, to the extent generalizations can be made, are often more shy, tend not to relate to strangers, want to deal with their own, do not want to relocate and have strong family relationships (Weller, 1965). The rural areas of this country contain at least five million
disabled persons, yet little has been done in the way of rehabilitation research in rural populations.

The Lowery definition of "rural" is "open country or a non-incorporated town, village or other place which has a population of not over 5,500" (p. 25). Compare that definition with Sher's (1981) more narrow definition of "open countryside or . . . places having fewer than 200 to 300 residents (p. 22). By Sher's reckoning only 27 percent of U.S. citizens live in non-urban areas (p. 9). By any view, the rural population is a substantial part of America's citizenry. The rural poor culture is often identified by these three characteristics: (1) persistent unemployment, (2) geographic isolation and (3) inaccessibility. These factors can tend to lead to a lack of appropriate education and training opportunities, suitable highways, access to libraries and museums, entertainment, convenient medical and dental service, adequate transportation, and an array of job possibilities due to the small selection of major industries (Lowery, 1980).

The problem is that its population restraints (5,500) in the definition of "rural" would lead one to believe that such a culture is confined only to very tiny towns and villages. This culture exists along with the attendant problems in and around towns larger than 5,500 in population. Rural should perhaps be viewed as a set of characteristics common to a cultural state of mind rather than merely to a geographic location and community size (Cook, et al., 1981).
It may be that the narrowness of the definition has caused researchers and theorists to shy away from the study of rural rehabilitation. The most important difference between the urban and rural cultures seems to be experiential (Weller, 1965). One provides its citizens with choices, rich expectations, great opportunities and, yes, a host of problems; the other offers fewer choices, reduced expectations, limited opportunities and its own set of difficulties.

A greater population lives in a basically urban society. It has been called computerized, overorganized, crowded, televised and zoned. Things begin and end in the cities. Rehabilitation is no different.

The culture of rehabilitation has developed primarily in urban areas and has attracted its professionals from urban areas, so that the experience during training is with urban agencies and services. What has evolved are values, concepts, and a language which are identified with the life process of the disabled which we call rehabilitation. It is basically a linear, industrial and technological process. It is often mechanized and sequential. The impersonal, take a number, take a test, take a pill and pay your bill approach to urban medicine has been adopted by far too many rehabilitation programs.

The urban techniques are so foreign to rural people that they simply boycott such services as long as possible and are considered either poorly motivated or labeled in some other way as failures. (Lowery, 1980, p. 25.)

The Wood County (Wisconsin) studies first sensitized the rehabilitation community to the issues of rural rehabilitation (Wright, 1969; BRIEF, 1970). This was a five year study; the first longitudinal study of a vocational
rehabilitation population. The Wood County disabled population was the experimental group, and the Eau Claire County disabled population was the control group. Neither county is greatly impoverished. The only changes made in the experimental group were two: (1) a saturation of staff counselors to serve every disabled person in the county, and (2) an extension of service to culturally deprived as well as physically and mentally disabled. Studied during the five years by a team of researchers from the University of Wisconsin were: client satisfaction, rehabilitation gain, placement, counselor effectiveness and cost benefits.

It was found that increasing the service providing counselors twofold (doubling the amount) increased successful rehabilitation fourfold. There were other findings, but the main conclusion was that this approach could work and would be cost beneficial. There was a move for a few years to serve more culturally deprived (largely blacks from large cities) but in 1973 the law (P.L. 93-112) mandated that more emphasis be placed on the more severely disabled.

Most other studies have been non-experimental and have only yielded ideas for further research (Dunn and Korn, 1973; Myers, 1974; and Frost, 1976). Menz (1976) and Benham (1976) studied rural disabled high school youth. Greenwood (1976) studied city welfare recipients being successfully served in a rural rehabilitation facility. Miller (1968), Lowery (1980) and Cook (1981) have studied
the rural rehabilitation problems in very general terms. Cook's best suggestion is the reporting of the utilization of housewives in the rural communities as rehabilitation aids who act as agents of the state agency.

Young (1981) reports using paraprofessionals and/or indigenous "health aids" in small village outposts to bring consistent and quality health care to Indians in rural Ontario, Canada.

Bryant (1981) takes the same idea coining the phrase "physician extenders" for health delivery in rural areas. Johnson and Cooper (1982) frame the problem of lack of good rural health delivery in Appalachian Kentucky in their 50 year longitudinal study. A hopeful sign is that one of the 1982 National Institute for Handicapped Research priorities (#10) is to develop a program to use existing outreach networks such as home demonstration agents for delivering services to deinstitutionalized and other severely handicapped persons in rural areas (NIHR, 1982).

Young also deals with a concept which points up another means of effective rural outreach: "Telehealth"—the use of telecommunications for education and service delivery. Bennett, et al. (1978) have formulated a guide to telecommunications for rural health care. Telehealth and telemedicine have been viable concepts for several years (Bashshur, 1972; Elton, 1972; Park, 1974; Doermann, 1976; Anderson and Walcoff, 1976; and Neham, 1976). O'Neill, et al. (1973, 1976a, 1976b) sees an application
to social services and vocational rehabilitation. Bruyer (1980) suggests the use of telecommunications for training rehabilitation personnel.

In the mid 1970's the Rehabilitation Services Administration was engaged in research and demonstration projects utilizing telecommunications. The idea was well developed but has proved too costly in the light of cost cutting measures in the early 1980's (John and Katz, 1977 a & b; Park and Pawlowski, 1978; BRIEF, 1978).

One other venture into technology bears mention. It was a demonstration of rural placement at the Quadco Rehabilitation Center (Dietsch, 1978; Quadco, 1979). The center set up a computerized job bank to assist in placing disabled individuals in local industries in Northwestern Ohio. This project used community service aids as was suggested earlier.

Steinberg (1978) lists the recommendations of a 1978 conference on cultural issues in rehabilitation which are relevant here (Quoted in Lowery, 1980).

1. Establishment of separate standards to deal with unique aspects of cultural entities.

2. Financial and time allotments for rehabilitation that take into consideration delays due to culture, language, transportation and other barriers to rehabilitation.

3. Continuing training for indigenous service providers including college credit and
advanced degrees.

4. Counselor training programs should integrate cultural issues into curricula (p. 27).

Outcome Studies in Rehabilitation

Berkowitz et al. (1975) in reviewing outcome studies in rehabilitation reported that the data analysis techniques most often used in these studies were multiple regression (including step-wise), chi-square analysis, analysis of variance and t-tests. The outcome studies reviewed in this paper bore out that finding.

Reagles (1970) and Reagles et al. (1970) studied client satisfaction with rehabilitation services and tested a scale of rehabilitation gain in conjunction with the Wood County Studies. The Wood County project was the first such major longitudinal study of vocational rehabilitation clients in any type of setting. It was the first time also that controlled conditions were used in the field to measure treatment effects. They used correlation analysis techniques to find that saturation of services yields greater pro rata gains than selectively provided service. A study using regression analysis to follow up on employed clients discovered that only about 27 percent of the successfully placed group had been fired from one or more jobs one year later (Overs, 1971). This study was a follow-up on archival client data.
A rehabilitation gain index consisting of five dimensions was used to assess change over a period of one year in 186 rehabilitation clients (Hawryluk, 1974). The index used varied considerably among clients indicating both gains and losses. Successfully rehabilitated clients showed the highest mean gain. The data analysis used was chi-square.

Three outcome studies by the same author are of note: The first was an attempt to predict client outcome (Bolton, 1972); the second related vocational measures of client change to non-vocational measures (Bolton, 1974); and the third was a six-year longitudinal which analyzed the long term vocational and psychological gains of former rehabilitation clients (Bolton, 1978). Bolton used regression and factor analysis in his studies. His main findings were these: that vocational success and psychological adjustment are dimensions of client change and that rehabilitation services appear to have a significant overall effect on clients' adjustment to work.

Two other outcome studies used chi-square analysis. The first studied the relationship of vocational evaluation recommendations to client training and employment outcome (Cook and Brookings, 1980). The second studied the relationship between access to welfare-type programs and the extent to which clients pursue vocational rehabilitation (Walls, 1982). Cook and Brookings analyzed demographic, psychological and vocational information and found no
relationship between type of recommendations made and completion of rehabilitation program. Program completers, however, were more often successfully placed in jobs.

The Walls study mentioned earlier examined among other variables, sex, age and disabling condition in relation to vocational rehabilitation outcomes including successful placement. Walls found no relationship between any one of these or any combination of these variables and successful placement. Walls' study was not done in a rural setting.

One seems on solid ground to use archival data as this study does. Multiple regression was used in such studies as was stated above. Also chi-square analysis was used in several studies. Loglinear analysis which is used in this study is based on chi-square analysis and in fact is a more complex form of the chi-square data analysis technique (Kennedy, 1983).

Summary

Having reviewed the literature in the areas of general vocational rehabilitation, the history of vocational rehabilitation, placement, salary levels for disabled persons and rural rehabilitation, several trends seem to come to the fore.

The Vocational Rehabilitation program and the various professions within that program have been solidly in place for some 63 years and they continue to the present time.
The current program seems to be even stronger with the major change coming in 1973 in the form of an emphasis on serving the more severely handicapped.

The goal of the program is still job placement to a position suitable to the client's potential, abilities and training. Among disabled persons, women seem to get short-changed in types of support, level of service and income level at placement on the job.

The literature on rural rehabilitation is sparse and only superficial in its study of the genuine problems specific to the rural culture. Therefore there appears to be a lack of knowledge about service and practice methods and needs in rural areas. Especially needed are outcome studies of rural disabled people.

These trends lend themselves to the problem at hand which is to discover association between several client traits and placement success and/or salary level in a rural setting.
This study investigated the variables related to placement success or lack of success among the clients served by Portsmouth Rehabilitation Services, a rural rehabilitation facility, from its five county catchment area, within the calendar years 1980 and 1981. The definition of success used here mirrors the federal definition as found in the 1973 Rehabilitation Act as amended—that is, obtaining a suitable job and retaining that job for at least 60 days.

The Setting

The clients are referred to the Portsmouth facility by the state rehabilitation agency, the Ohio Rehabilitation Services Commission. The facility serves only state agency referred clients. While the rehabilitation center is free standing, it is a satellite of a large rehabilitation facility in metropolitan Cincinnati, some 100 miles away. The client flow is steady and preplanned due to a year-to-year renewable contract between the state agency and the facility. Service and placement goals are set when the contract is drawn up. The placement goal was exceeded in both years.
Though the facility is a satellite of the larger one, it functions organizationally in great independence. It is the only comprehensive facility in the five-county area and one of the few within the entire Southeastern third of the State. A few small homogeneous rehabilitation workshops are scattered around the area. The five rural counties are Ross, Scioto, Pike, Adams and Lawrence. They are economically depressed and basically agrarian. The largest is semi-industrial. Chronic unemployment is the rule in this area.

Yet the facility is comparatively small (20-25 clients on a daily basis) and very typical of rehabilitation facilities around the state, whether urban or rural. Besides a director, the staff consists of a vocational evaluator, a work adjustment specialist, two job placement counselors, a rehabilitation aide and a secretary. The facility occupies rented space in an easily accessible, close-in section of a rural community on the Ohio River. It provides vocational evaluation which utilizes tests, work samples, behavioral observations and counseling. The work adjustment program uses simulated work, counseling and various behavior modification techniques. Placement counselors conduct a job readiness program of one week's duration for all clients before they attempt job search or job placement. The job readiness program consists of learning to fill out job applications and resumes, experiencing mock interviews with the use of video tape
recordings, job coaching and modified job club techniques. Monthly placement meetings are held with state agency staff. Weekly case review staffings are conducted for all clients.

This is the most common approach to serving clients within a facility. It is a team approach. Each staff member becomes part of the rehabilitation team which ultimately seeks appropriate placement for each client. The multi-disciplinary approach to placement actually begins from the day the client enters the service program. The Portsmouth program studied here is typical and therefore generalizeable to other similar rehabilitation facilities. This facility opened its doors in 1978 and was awarded statewide recognition for outstanding service in 1980.

The Sample

The sample were 184 (n=184), that is, the total data were obtained and results were studied on all clients in the placement program of the facility for the full calendar years of 1980 and 1981.

The subjects were all adults, ages 18 through 61. Ninety-eight were age 30 or younger; eighty-six were over 30. 110 were males; 74 were females. 129 were considered non-severely handicapped; 55 severely. 101 had physical handicaps, while 83 had mental handicaps. Of the 184 clients, 119 were placed successfully while 65 were not successfully placed.
All clients were initially referred to the Ohio Rehabilitation Services Commission's Bureau of Vocational Rehabilitation (BVR) where an assigned counselor declared them eligible for rehabilitation services on the criteria that each had a physical or mental disability, that the disability was a handicap to employment, and that there were a reasonable expectation that the client could benefit from rehabilitation services in terms of overcoming his or her handicap. Also, the BVR counselor would classify the client as severely or non-severely handicapped. The record keeping was observed to be meticulous, the classifications accurate, although later the lack of clarity in the classification system imposed on the counselor and the record keepers will be discussed. The records were of good quality and complete.

Once the counselor declared a client eligible and decided that he or she would benefit from the services of the rehabilitation facility, the counselor would refer the client to the facility for services, usually beginning with a vocational evaluation.

From initial referral to the facility, the BVR counselor and the facility staff work with the client toward a vocational goal. In the case of these 184, each was determined ready at some point to begin a job search and to start working with the facility placement specialists toward the goal of becoming employed.
Measured Variables

Independent variables were four in number and each was assessed dichotomously: sex (male and female), age (over 30 or 30 and under), severity of disability (severe or non-severe) and type of disability (psychological, learning or physical).

The response or dependent variable was success of placement, defined previously as obtaining and retaining a job for 60 days or longer. For the subset of clients successfully placed (n=119), an additional exploration was conducted where salary level was the dependent variable with the same independent variables as above. Salary was the starting wage per hour paid to each placed client.

The sex and age variables are self-explanatory. The over and under thirty dichotomy was chosen to approximate in round numbers the median age of the population which was calculated at 29.25 years of age. Severity of disability was based on the counselor's determination which was recorded on each client. Mental disabilities included emotional or psychological diagnoses or mental illness as well as mental retardation or a diagnosed learning disability. These disability groupings were determined by the counselor and were so specified in the data. The same was true for physical disabilities which include all non-mental categories (e.g. orthopedic, sensory and disease related).
Data Collection Procedures

The data used in this study were compiled by the staff of the facility. Each client was assigned an identification number to protect the privacy and confidentiality of individuals' names. Listed for each number (subject) was the client's sex, age, disability type (physical disability, psychological disability or mental retardation/learning disability), the severity of the disability (severe or non-severe using federal guidelines), success or failure in job placement, the type of job obtained and the salary. The statistics were collected monthly on each client from the case record and were used as part of a program evaluation system. The data for this study were taken from those compiled lists. Data used were the client's age, sex, type of disability, salary and the classification of disability as severe or non-severe.

The staff person recorded the data from the facility records over a period of one week and sent the information by mail marked "confidential and personal." Several visits were made to the facility to learn about the program, to interview staff and to become acquainted with the area. The process by which the data were recorded was also observed to be done with great care and accuracy.
Statistical Procedures

This study tested the hypothesis that there are significant relationships between the independent variables and job placement success. A four-way analysis of variance to explore relationships and associations was performed on the dichotomous success variables. A four-way logit model analysis was also performed on five variables. The log-linear analysis was to determine if sex, severity of disability, type of disability and age (over or under thirty) cause discrepancies about the predictor variable, success of placement. The model was asymmetrical and was run on the BMDP 4F program.

The hypothesis tested was that there were significant differences among Observed Cell frequencies in the 32 cells from Expected Cell frequencies.

Also run was a stepwise multiple regression analysis on salary level as was done in the pilot study to explore the relationship between any of the independent variables taken one at a time or in combinations to the dependent variable, level of salary. The hypothesis here was also that significant differences would not appear among salary levels as related to variables or combinations of them, except perhaps in the case of white males related to higher salaries as above.
The principle study of data in this paper employed a relatively new generalized approach to statistical analysis of qualitative variables called loglinear contingency table analysis (Milone, 1982; Kennedy, 1983).

Loglinear contingency table analysis is a product of the late 1960's and 1970's. Summary of its development is evident in Goodman's (1978) text which is a collection of various of his journal articles. Marks (1975) was the pioneer of its use in education as were Knoke and Burke in the social sciences in general (1980).

Loglinear is a way of handling tables of more than two dimensions (up to six) in a chi-square analysis of data. While the several dimensions are manageable within multiple chi-square analyses, loglinear allows these analyses to be performed simultaneously. In the analysis all variables analyzed must be categorical. They may be ordered or unordered, dichotomous or polytomous. Moreover, two kinds of analysis are possible as is true in other types of analysis: (1) Symmetrical: where relationships between or among variables are sought, and (2) Asymmetrical: where at least one variable is a dependent variable. In loglinear this is called the logit variable.

Loglinear contingency table analysis is used because it is based on chi-square as formulated by Fisher which can yield accurate findings in studies such as this. It is purported to be more sensitive than multiple regression analysis. In addition, according to Kennedy (1983),
loglinear contingency table analysis is an especially effective tool in obtaining information concerning group effects and interaction between and among variables.

Kennedy states further in suggesting loglinear as favorable to canonical variate analysis or multiple regression that the "... logit model approach to the analysis is far less dependent on the distributional assumptions of normality and homogeneity of variance" (Kennedy, 1983, p. 232).
IV. RESULTS

First to be presented are the four-way ANOVA and the four-way logit model analysis. Next the multiple regression analysis is presented on the subset of wage level at placement.

Results of the Study

The four-way analysis of variance was run on the SPSS computer program. The four-way ANOVA assesses simultaneously all effects including all interactions as in the multiple regression.

Successful employment was the dependent variable; the independent variables were age, type of disability, severity of disability and sex. They were entered in the logit model analysis in the same order as they were on the ANOVA. Relevant means and standard deviations can be found on Table 3.

The four-way ANOVA did not yield any F scores high enough to achieve significance. Only one source of variation came close at the .07 level of probability, the age-type-sex configuration. This same grouping showed a rather high component score on the logit model study also, but in the loglinear as in the ANOVA showed itself to be not
<table>
<thead>
<tr>
<th>Variable/Level</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30 years</td>
<td>98</td>
<td>.60</td>
<td>.49</td>
</tr>
<tr>
<td>Under 30, physically disabled</td>
<td>47</td>
<td>.62</td>
<td>.49</td>
</tr>
<tr>
<td>Under, physically and non-severely</td>
<td>27</td>
<td>.59</td>
<td>.50</td>
</tr>
<tr>
<td>Under, physically, non-severely and male</td>
<td>16</td>
<td>.63</td>
<td>.50</td>
</tr>
<tr>
<td>Under, physically, non-severely and female</td>
<td>11</td>
<td>.55</td>
<td>.52</td>
</tr>
<tr>
<td>Under, physically and severely</td>
<td>20</td>
<td>.65</td>
<td>.49</td>
</tr>
<tr>
<td>Under, physically, severely and male</td>
<td>18</td>
<td>.67</td>
<td>.49</td>
</tr>
<tr>
<td>Under, physically, severely and female</td>
<td>2</td>
<td>.50</td>
<td>.71</td>
</tr>
<tr>
<td>Under and mentally disabled</td>
<td>51</td>
<td>.59</td>
<td>.50</td>
</tr>
<tr>
<td>Under, mentally and non-severely</td>
<td>36</td>
<td>.64</td>
<td>.49</td>
</tr>
<tr>
<td>Under, mentally, non-severely and male</td>
<td>24</td>
<td>.58</td>
<td>.50</td>
</tr>
<tr>
<td>Under, mentally, non-severely and female</td>
<td>12</td>
<td>.75</td>
<td>.45</td>
</tr>
<tr>
<td>Under, mentally and severely</td>
<td>15</td>
<td>.47</td>
<td>.52</td>
</tr>
<tr>
<td>Under, mentally, severely and male</td>
<td>12</td>
<td>.42</td>
<td>.51</td>
</tr>
<tr>
<td>Under, mentally, severely and female</td>
<td>3</td>
<td>.67</td>
<td>.58</td>
</tr>
</tbody>
</table>
TABLE 3 (Continued)

<table>
<thead>
<tr>
<th>Variable/Level</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 30 or over</td>
<td>86</td>
<td>.70</td>
<td>.46</td>
</tr>
<tr>
<td>Over and physically</td>
<td>54</td>
<td>.70</td>
<td>.46</td>
</tr>
<tr>
<td>Over, physically and non-severely</td>
<td>39</td>
<td>.67</td>
<td>.48</td>
</tr>
<tr>
<td>Over, physically, non-severely and male</td>
<td>23</td>
<td>.57</td>
<td>.51</td>
</tr>
<tr>
<td>Over, physically, non-severely and female</td>
<td>16</td>
<td>.81</td>
<td>.40</td>
</tr>
<tr>
<td>Over, physically and severely</td>
<td>15</td>
<td>.80</td>
<td>.41</td>
</tr>
<tr>
<td>Over, physically, severely and male</td>
<td>10</td>
<td>.80</td>
<td>.42</td>
</tr>
<tr>
<td>Over, physically, severely and female</td>
<td>5</td>
<td>.80</td>
<td>.45</td>
</tr>
<tr>
<td>Over and mentally disabled</td>
<td>32</td>
<td>.69</td>
<td>.47</td>
</tr>
<tr>
<td>Over, mentally and non-severely</td>
<td>27</td>
<td>.67</td>
<td>.48</td>
</tr>
<tr>
<td>Over, mentally, non-severely and male</td>
<td>4</td>
<td>.75</td>
<td>.50</td>
</tr>
<tr>
<td>Over, mentally, non-severely and female</td>
<td>23</td>
<td>.65</td>
<td>.49</td>
</tr>
<tr>
<td>Over, mentally, severely and male</td>
<td>5</td>
<td>.80</td>
<td>.45</td>
</tr>
<tr>
<td>Over, mentally, severely and female</td>
<td>3</td>
<td>1.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Grand Means and Standard Deviations 184 .65 .48
significant beyond the .10 level.

Table 4 shows the full regression analysis which is the most conservative.
TABLE 4
Analysis of Variance of Successful Placement by Age, Type of Disability, Severity of Disability and Sex

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Effects</td>
<td>4</td>
<td>0.510</td>
<td>0.127</td>
<td>0.54</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>0.456</td>
<td>0.456</td>
<td>1.93</td>
</tr>
<tr>
<td>Type of Disability</td>
<td>1</td>
<td>0.000</td>
<td>0.000</td>
<td>0.00</td>
</tr>
<tr>
<td>Severity of Disability</td>
<td>1</td>
<td>0.002</td>
<td>0.002</td>
<td>0.01</td>
</tr>
<tr>
<td>Sex</td>
<td>1</td>
<td>0.012</td>
<td>0.012</td>
<td>0.05</td>
</tr>
<tr>
<td>Two-way Interactions</td>
<td>6</td>
<td>0.558</td>
<td>0.093</td>
<td>0.40</td>
</tr>
<tr>
<td>Age and Type</td>
<td>1</td>
<td>0.009</td>
<td>0.009</td>
<td>0.04</td>
</tr>
<tr>
<td>Age and Severity</td>
<td>1</td>
<td>0.118</td>
<td>0.118</td>
<td>0.50</td>
</tr>
<tr>
<td>Age and Sex</td>
<td>1</td>
<td>0.098</td>
<td>0.098</td>
<td>0.41</td>
</tr>
<tr>
<td>Type and Severity</td>
<td>1</td>
<td>0.049</td>
<td>0.049</td>
<td>0.21</td>
</tr>
<tr>
<td>Type and Sex</td>
<td>1</td>
<td>0.012</td>
<td>0.012</td>
<td>0.05</td>
</tr>
<tr>
<td>Severity and Sex</td>
<td>1</td>
<td>0.153</td>
<td>0.153</td>
<td>0.65</td>
</tr>
<tr>
<td>Three-way Interactions</td>
<td>4</td>
<td>1.138</td>
<td>0.284</td>
<td>1.21</td>
</tr>
<tr>
<td>Age, Type and Severity</td>
<td>1</td>
<td>0.005</td>
<td>0.005</td>
<td>0.02</td>
</tr>
<tr>
<td>Age, Type and Sex</td>
<td>1</td>
<td>0.817</td>
<td>0.817</td>
<td>3.47*</td>
</tr>
<tr>
<td>Age, Severity and Sex</td>
<td>1</td>
<td>0.150</td>
<td>0.150</td>
<td>0.64</td>
</tr>
<tr>
<td>Type, Severity and Sex</td>
<td>1</td>
<td>0.000</td>
<td>0.000</td>
<td>0.99</td>
</tr>
</tbody>
</table>
TABLE 4 (Continued)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four-way Interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, Type, Severity and Sex</td>
<td>1</td>
<td>0.038</td>
<td>0.038</td>
<td>0.16</td>
</tr>
<tr>
<td>Explained</td>
<td>15</td>
<td>2.437</td>
<td>0.162</td>
<td>0.69</td>
</tr>
<tr>
<td>Residual</td>
<td>168</td>
<td>39.600</td>
<td>0.236</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>183</td>
<td>42.037</td>
<td>0.230</td>
<td></td>
</tr>
</tbody>
</table>

*£ < .07
Loglinear Results

As noted, the logit or dependent variable was success of placement. The independent variables were: sex, type of disability, age and severity of disability. Each has two levels therefore comprising a five-way contingency table analysis with a 32 cell table. (See Table 5.) Table 5 shows the data in 32 cells with marginal totals. These are the data as they were found before analysis. Some caution needs to be taken noting some small cell sizes. Potential ramifications could be lack of power and violation of ANOVA assumptions.

The logit model analysis was run on the BMDP 4F computer program where 17 models were requested to show main effects and any interaction among variables. Since the analysis was asymmetrical, only the models containing all five variables were fitted (Kennedy, 1983, p. 180). (See Table 6.)

Table 6 shows a non-significant residual probability (p < .88) for the null model (0) which calls for comparison of the observed and expected frequency table values. Thus observed cell frequencies generated by the null model are not significantly different. The expected values of the null model best explain the observed data. (See Table 7.)
**TABLE 5**

Observed Frequency Table

<table>
<thead>
<tr>
<th>Employment</th>
<th>Sex</th>
<th>Severity</th>
<th>Type</th>
<th>Age</th>
<th>Over</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Placed</td>
<td>Male</td>
<td>Nonsevere</td>
<td>Physical</td>
<td>10</td>
<td>13</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>14</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td>24</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Severe</td>
<td>Physical</td>
<td>13</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td>18</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Nonsevere</td>
<td>Physical</td>
<td>6</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>8</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td>14</td>
<td>29</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Severe</td>
<td>Physical</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Not Placed</td>
<td>Male</td>
<td>Nonsevere</td>
<td>Physical</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>10</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td>16</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Severe</td>
<td>Physical</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td>13</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Nonsevere</td>
<td>Physical</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td>8</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Severe</td>
<td>Physical</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
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<td>1</td>
<td>2</td>
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<td></td>
<td></td>
<td>Total</td>
<td></td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Total of the Observed Frequency Table is 184
Table 7 presents the expected values using the null model. In effect, Table 5 represents expected cell frequencies if no variable would be promoting significant discrepancy. To get the impact of the similarities between the observed and expected cell frequencies, compare Tables 5 and 7. Notice how similar their cell values are.

Since the null-logit model could not be rejected on statistical grounds, it was concluded that none of the four variables promote sufficient discrepancy away from the expected cell frequencies given by the null-logit model to warrant rejection of the null model. Main effects cannot be documented for any of the four variables, age, type of disability, severity of disability or sex nor can we document any interaction among any two or more of the variables relative to the dependent variable.*

* A three-way loglinear analysis was also performed to increase individual cell frequency sizes. In the three-way the null-logit model could not be rejected on statistical grounds. Therefore the three-way yielded nothing that the former analyses had not already found. In this analysis the age and sex variables were collapsed over.
### TABLE 6

Summary Table

<table>
<thead>
<tr>
<th>Source/Model</th>
<th>df.</th>
<th>$L^2$ (Residuals)</th>
<th>p</th>
<th>df.</th>
<th>$L^2$ (Components)</th>
<th>p</th>
<th>Marginal Configurations fitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0) Null/Total</td>
<td>15</td>
<td>8.93</td>
<td>.88*</td>
<td>1</td>
<td>7.31</td>
<td>.92</td>
<td>ABCD, E.</td>
</tr>
<tr>
<td>(1) Due to Age A</td>
<td>14</td>
<td>7.31</td>
<td>.92</td>
<td>1</td>
<td>7.17</td>
<td>.89</td>
<td>ABCD, AE.</td>
</tr>
<tr>
<td>(2) Due to Type given age B: A</td>
<td>13</td>
<td>7.17</td>
<td>.89</td>
<td>1</td>
<td>7.15</td>
<td>.85</td>
<td>ABCD, AE, BE.</td>
</tr>
<tr>
<td>(3) Due to Severity given age and type C: A &amp; B</td>
<td>12</td>
<td>7.15</td>
<td>.85</td>
<td>1</td>
<td>6.68</td>
<td>.82</td>
<td>ABCD, AE, BE, CE.</td>
</tr>
<tr>
<td>(4) Due to Sex given age, type and severity D: A, B &amp; C</td>
<td>11</td>
<td>6.68</td>
<td>.82</td>
<td>1</td>
<td>6.68</td>
<td>.82</td>
<td>ABCD, AE, BE, CE, DE.</td>
</tr>
<tr>
<td>Source/Model Description</td>
<td>df.</td>
<td>$L^2$ (Residuals)</td>
<td>p</td>
<td>df.</td>
<td>$L^2$ (Components)</td>
<td>p</td>
<td>Marginal Configurations fitted</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-------------------</td>
<td>-----</td>
<td>-----</td>
<td>--------------------</td>
<td>-----</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>(5) Due to Age-type interaction given main effects for age, type, severity and sex</td>
<td>10</td>
<td>6.67</td>
<td>0.76</td>
<td>1</td>
<td>0.01</td>
<td></td>
<td>ABCD, ABE, CE, DE.</td>
</tr>
<tr>
<td>(6) Due to age-severity interaction given all main effects and Age-type interaction</td>
<td>9</td>
<td>6.08</td>
<td>0.73</td>
<td>1</td>
<td>0.59</td>
<td></td>
<td>ABCD, ABE, ACE, DE.</td>
</tr>
<tr>
<td>(7) Due to age-sex interaction given all main effects and AB &amp; AC interaction</td>
<td>8</td>
<td>5.90</td>
<td>0.66</td>
<td>1</td>
<td>0.18</td>
<td></td>
<td>ABCD, ABE, ACE, ADE.</td>
</tr>
<tr>
<td>Source/Model</td>
<td>df.</td>
<td>$L^2$ (Residuals)</td>
<td>p</td>
<td>df.</td>
<td>$L^2$ (Components)</td>
<td>p</td>
<td>Marginal Configurations fitted</td>
</tr>
<tr>
<td>-------------</td>
<td>-----</td>
<td>------------------</td>
<td>----</td>
<td>-----</td>
<td>------------------</td>
<td>----</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>(8) Due to type-severity interaction given all main effects and AB, AC &amp; AD interaction</td>
<td>7</td>
<td>5.01</td>
<td>.66</td>
<td>1</td>
<td>0.89</td>
<td></td>
<td>ABCD, ABE, ACE, ADE, BCE.</td>
</tr>
<tr>
<td>(9) Due to type-sex interaction given all main effects and AB, AC, AD &amp; BC interaction</td>
<td>6</td>
<td>5.01</td>
<td>.54</td>
<td>1</td>
<td>0.00</td>
<td></td>
<td>ABCD, ABE, ACE, BCE, BDE.</td>
</tr>
<tr>
<td>Source/Model</td>
<td>df.</td>
<td>$L^2$ (Residuals)</td>
<td>p</td>
<td>df.</td>
<td>$L^2$ (Components)</td>
<td>p</td>
<td>Marginal Configurations fitted</td>
</tr>
<tr>
<td>-------------</td>
<td>-----</td>
<td>------------------</td>
<td>---</td>
<td>-----</td>
<td>------------------</td>
<td>---</td>
<td>--------------------------</td>
</tr>
<tr>
<td>(10) Due to severity-sex interaction given all main effects and AB, AC, AD, BC &amp; BD interaction</td>
<td>5</td>
<td>4.45</td>
<td>.40</td>
<td>1</td>
<td>0.56</td>
<td>ABCD, ABE, ACE, ADE, BCE, BDE, CDE.</td>
<td></td>
</tr>
<tr>
<td>(11) Due to age-type-severity interaction given all main effects and all first order interaction effects</td>
<td>4</td>
<td>4.05</td>
<td>.40</td>
<td>1</td>
<td>0.40</td>
<td>ABCD, ABCE, ADE, BDE, CDE.</td>
<td></td>
</tr>
<tr>
<td>Source/Model</td>
<td>df* (Residuals)</td>
<td>( L^2 )</td>
<td>p</td>
<td>df* (Components)</td>
<td>( L^2 )</td>
<td>p</td>
<td>Marginal Configurations fitted</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------</td>
<td>-----------</td>
<td>----</td>
<td>-----------------</td>
<td>-----------</td>
<td>----</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>(12) Due to age-type-sex interaction given all main effects and all first order interaction effects and ABC interaction</td>
<td>3</td>
<td>0.82</td>
<td>.84</td>
<td>1</td>
<td>3.23</td>
<td>.10</td>
<td>ABCD, ABCE, ABDE, CDE.</td>
</tr>
<tr>
<td>(13) Due to age-severity-sex interaction given all main effects as above</td>
<td>2</td>
<td>0.18</td>
<td>.91</td>
<td>1</td>
<td>0.64</td>
<td>.64</td>
<td>ABCD, ABCE, ABDE, ACDE.</td>
</tr>
<tr>
<td>Source/Model</td>
<td>df*</td>
<td>$L^2$ (Residuals)</td>
<td>p</td>
<td>df*</td>
<td>$L^2$ (Components)</td>
<td>p</td>
<td>Marginal Configurations fitted</td>
</tr>
<tr>
<td>--------------</td>
<td>-----</td>
<td>------------------</td>
<td>-----</td>
<td>-----</td>
<td>-------------------</td>
<td>-----</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(14) Due to type-severity-sex interaction given all main and interaction effects as above</td>
<td>1</td>
<td>0.17</td>
<td>0.68</td>
<td>1</td>
<td>0.01</td>
<td></td>
<td>ABCD, ABCE, ABDE, ACDE, BCDE.</td>
</tr>
<tr>
<td>(15) Due to age-type-severity-sex interaction</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>1</td>
<td>0.17</td>
<td></td>
<td>ABCDE.</td>
</tr>
</tbody>
</table>

*Null probability is non-significant and therefore cannot be statistically rejected. No main effects nor interaction can be documented.*
### TABLE 7

**Expected Values Using Above Model**

<table>
<thead>
<tr>
<th>Employment</th>
<th>Sex</th>
<th>Severity</th>
<th>Type</th>
<th>Age</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under</td>
<td>Over</td>
<td>Total</td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>Placed</td>
<td>Male</td>
<td>Nonsevere</td>
<td>Physical</td>
<td>10.8</td>
<td>15.2</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>15.9</td>
<td>3.2</td>
<td>19.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe</td>
<td>Physical</td>
<td>12.7</td>
<td>6.4</td>
<td>19.1</td>
<td>21.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>8.3</td>
<td>2.5</td>
<td>10.8</td>
<td>10.8</td>
</tr>
<tr>
<td>Not Placed</td>
<td>Male</td>
<td>Nonsevere</td>
<td>Physical</td>
<td>6.2</td>
<td>8.8</td>
<td>15.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>9.1</td>
<td>1.8</td>
<td>11.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Severe</td>
<td>Physical</td>
<td>7.3</td>
<td>3.6</td>
<td>11.0</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>4.7</td>
<td>1.5</td>
<td>6.2</td>
<td>6.2</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Nonsevere</td>
<td>Physical</td>
<td>4.4</td>
<td>6.2</td>
<td>10.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>4.4</td>
<td>9.1</td>
<td>13.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Severe</td>
<td>Physical</td>
<td>1.1</td>
<td>2.2</td>
<td>3.3</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>1.5</td>
<td>1.1</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe</td>
<td>Physical</td>
<td>1.1</td>
<td>2.2</td>
<td>3.3</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mental</td>
<td>1.5</td>
<td>1.1</td>
<td>2.6</td>
<td>2.6</td>
</tr>
</tbody>
</table>
Multiple Regression Analysis

A multiple regression analysis was performed in order to replicate the pilot study and to verify that only the sex and age variables were significant in relation to level of salary as a dependent variable.

This analysis was done on the 119 successfully placed clients. Actual salary was the dependent variable. The four independent variables were: sex and severity of disability (both dichotomous variables), type of disability (the same three levels used in the three-way loglinear) and actual age in years. Variable means and standard deviations are shown on Table 8.

TABLE 8
Variable Means and Standard Deviations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary</td>
<td>4.4717</td>
<td>5.42</td>
<td>119</td>
</tr>
<tr>
<td>Severity</td>
<td>1.3109</td>
<td>0.47</td>
<td>119</td>
</tr>
<tr>
<td>Type</td>
<td>1.5378</td>
<td>0.67</td>
<td>119</td>
</tr>
<tr>
<td>Sex</td>
<td>1.437</td>
<td>0.52</td>
<td>119</td>
</tr>
<tr>
<td>Age</td>
<td>34.3605</td>
<td>12.39</td>
<td>119</td>
</tr>
</tbody>
</table>
The SPSS computer program was used. Table 9 summarizes the regression analysis. It shows that F scores on the severity (r=0.233) and sex (r=0.169) variables are significant at the .001 and .05 levels respectively. It also shows non-significant F scores on the age (r=0.06) and type (r=0.041) of disability variables. Table 10 is an ANOVA summary table displaying the significance of the linear regression as a source of variation. On Table 9 notice the significant F score for the severity variable with a probability greater than .001. Also note the probability at greater than .05 for the sex variable. Table 10 shows the F on the linear regression at greater than .05 as a source of variation.
### TABLE 9
Regression Summary Table
Using Salary as Dependent Variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized Regression Coefficient</th>
<th>Standard Error of Regression Coefficient</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Simple R</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary</td>
<td>.2326</td>
<td>1.08</td>
<td>.1872</td>
<td>.0350</td>
<td>.1872</td>
<td>6.32**</td>
</tr>
<tr>
<td>Severity</td>
<td>.1691</td>
<td>1.06</td>
<td>.2664</td>
<td>.0710</td>
<td>.1442</td>
<td>2.85*</td>
</tr>
<tr>
<td>Sex</td>
<td>.0595</td>
<td>0.04</td>
<td>.2707</td>
<td>.0733</td>
<td>.0983</td>
<td>0.36</td>
</tr>
<tr>
<td>Age</td>
<td>.0413</td>
<td>0.74</td>
<td>.2737</td>
<td>.0749</td>
<td>.0279</td>
<td>0.20</td>
</tr>
</tbody>
</table>

**P < .001**

*P < .05
### TABLE 10
Analysis of Variance Summary Table

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Means Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear Regression</td>
<td>4</td>
<td>259.9094</td>
<td>64.9774</td>
<td>2.31*</td>
</tr>
<tr>
<td>Residuals from Regression</td>
<td>114</td>
<td>3209.1152</td>
<td>28.1501</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>3469.0246</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

Since the sex and severity of disability were the variables that showed significance in the stepwise linear regression, their means and standard deviations were computed and are shown on Table 11 for comparison. Note that the data show that males make significantly more per hour to start than do females. The mean hourly wage for all males was $4.55 against $3.36 per hour for all females. Also of significance is that severely disabled males made the highest average salary when compared to all other group means.
# TABLE 11
Table of Relevant and Significant Means and Standard Deviations

<table>
<thead>
<tr>
<th></th>
<th>Non-Severe</th>
<th>Severe</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>28</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>$\bar{X}$</td>
<td>4.2965</td>
<td>4.9129</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.77</td>
<td>3.19</td>
</tr>
<tr>
<td>Female</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>8</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>$\bar{X}$</td>
<td>3.3695</td>
<td>3.28</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.88</td>
<td>0.16</td>
</tr>
<tr>
<td>Total</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>83</td>
<td>36</td>
<td>119</td>
</tr>
<tr>
<td></td>
<td>$\bar{X}$</td>
<td>3.8163</td>
<td>4.55</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.07</td>
<td>2.89</td>
</tr>
</tbody>
</table>
V. DISCUSSION AND CONCLUSIONS

This study has presented the problem, reviewed the relevant literature and used statistical methods to gain greater knowledge of several aspects of rural placement. In this chapter the findings are discussed and several conclusions are drawn. Also some implications for research and practice are suggested.

The first suggestion in the literature has to do with severity of disability and its relationship to placement success. No clear conclusion seems to be drawn in the literature. In this study no significant relationship between severity of disability and placement success was able to be found.

Walls' (1982) conclusion about all the independent variables studied here was that neither age, nor sex, nor type of disability nor severity were related to placement success. This study confirmed that lack of relationship.

As regards the salary variable, Walls concluded that males and especially severely disabled males received higher salaries than did females and less severely disabled males. This finding was confirmed in this study. Note that in the female population the average wage for severely disabled females was lower than the mean for non-severely
disabled females. The mean wage for all males was significantly higher than the mean wage for all females.

The rural poor setting is different from the urban setting. Views about the family and economic expectations may not be the same as they are in a non-rural setting. The literature is unclear as to the feeling among rural people for the traditional view of the male as the breadwinner. This traditional view could account for the higher male salary—a prevailing view of males needing higher pay. Yet the literature reviewed does show that males make a higher mean salary in all settings and under all circumstances. Therefore, to draw conclusions about the rural male economic dominance does not seem prudent.

Conclusions

1. Severity of disability was found to be non-significant in relation to job placement success in this rural setting.

2. Neither sex, nor type of disability nor age were found to be significantly related to job placement success.

3. Of the variables studied: sex, severity, type of disability and age, only the sex and severity variables are related to starting wage level. The severity variable only seems to be significant in relation to males. Males were found to make a higher starting wage, and severely disabled males were hired at a
higher wage than non-severely disabled males.

4. The study took place in a rural setting and that could have made for findings at variance with those in a urban setting. The culture of the rural agrarian and other aspects of vocational life and expectations may have made a difference. This, however, is the least definitive of all the conclusions. How an urban setting would produce findings at variance to these is unknown as a result of this study.

Discussion

The major finding of this study was that no relationship appears to be present between successful job placement of rural disabled rehabilitation clients and a set of variables traditionally associated with placement success. Significant main effects and interaction of any kind were not found in a five-way loglinear study. Neither were significant main effects or interaction found to show relationship in the three-way loglinear analysis. Perhaps placement success can be associated with a different set of variables or client traits or perhaps even placement specialist traits.

It was hypothesized at the outset of the study, due largely to a pilot study's findings, that no relationship would be found. The pilot study, however, was based on a multiple stepwise regression analysis. It was hoped that loglinear contingency table analysis, being a somewhat
more sensitive technique would show relationships in the larger study if any were to be found. None were found.

Perhaps the most surprising lack of relationship among the variables not found associated with success of job placement was severity of disability. Common sense and practice seem to expect this relationship although the question is not dealt with often enough in the literature to draw a conclusion. Perhaps the means of labeling severity of disability is not sensitive enough. While the Federal Regulations in regard to identifying a disability are quite extensive (see Appendix A), they are simply dichotomous. The person's disability is either a severe handicap to employment or a non-severe handicap to employment. Even after rehabilitation and the presumed overcoming of the handicap, the severity label is then placed on the disability (diagnosis).

Another problem is that severity of handicapping conditions is simply a physical diagnosis. The regulations are in fact a mixed list of diagnosable disease, definitions of functional limitation and variations on severity of physical impairment.

If handicapping conditions are the real kernel of the problem, then only handicap (barrier) rather than disability (diagnosis), need be declared as severe or non-severe, otherwise what is rehabilitation's purpose? Handicap could better be measured in terms of degree of barrier to employment on a more continuous scale of say 1 - 5 or perhaps
even more extensively as is done with some heart conditions and other physical pathologies.

As long as severity of disability and severity of handicap are continuably confused and, no matter how elaborate the guidelines, if "severe" and "non-severe" are the only labels, it will be difficult to determine the effect of handicap or disability on a person's vocational rehabilitation. When it is said that a person is severely disabled and therefore more difficult to place, there is ignorance on both counts. In the first place the measure of severity is based on medical rather than vocational information and in the second, no data show that what is now categorized as a severely disabled person is more difficult to place on a job.

It is probable that once this variable is a genuine client characteristic, meaning that it actually describes the extent to which the disability is a handicap to employment, it will then be able more properly to be studied in relationship to placement success.

The other variables studied, namely sex, age and type of disability are probably not especially relevant to placement success whether the severity variable is sensitive or not. Yet, they should not be ignored in a broader study of the relationship of client characteristics to placement success. A dichotomous variable with two levels may not interact in the same way with the other variables as will a polytomous variable with five levels.
It is recommended, therefore, that future research use a broader spectrum of severity measurement and that it actually measure handicap, that is, barrier(s) to employment. It is further suggested that this multi-level severity variable be one of the independent variables along with sex, age and type of disability and that they be analyzed for relationship to placement success.

Should this be done by way of loglinear analysis the number of subjects will need to be rather large to maintain proper cell frequencies. Five levels of the severity disability and two or three levels of the other variables could yield over 100 cells. An alternative design would be to use the less sensitive, but more easily manageable, stepwise multiple regression analysis.

Studies such as the one performed here using the present severity measure become careful analyses of carelessly collected data. Through no fault of the counselors, the guidelines they must use to measure the single most important piece of information needed to rehabilitate the client are not up to the task. Obviously, the same cannot be said for collection of data about sex, age or type of disability.

As to the rural setting being a contributing factor, the one major study done in Wood County, Wisconsin, was performed before the 1973 Rehabilitation Act and its 1974 regulations mandating identification of clients as severely or non-severely handicapped. Therefore, while placements
improved in numbers by a great percentage, the severity element was not a major consideration. As one reflects on the nature of the labeling problem for severity of handicap, it appears that the identification is no more or less sensitive in a rural setting than it is in an urban setting. However, if the suggestion above should be followed in a future study, the rural setting needs to be taken into consideration in the determination of the degree of vocational handicap the person's disability has become. A facially disfigured person, for example, may be better accepted in one setting rather than another. A severely retarded person may have a greater chance of employment in a rural setting as opposed to an urban one or vice versa.

One way to get at the real influence of geographic setting is to use this setting as one of the independent variables. An equal number of subjects could be matched and chosen from both a rural and urban setting. A limitation of this study is that while it was performed using subjects in a rural poor setting, those subjects were not actually compared to a group of non-rural subjects. Therefore while the subjects and their characteristics could be described and observed, no significant differences between variables associated with them and variables associated with an alternative group could be tested for. Hence this becomes more a case study than a study of a cross section of the population.
Another approach to a future outcome study of rural rehabilitation would be to compare several rural populations. Subjects from a rather poor and otherwise deprived area could be compared with subjects in a less economically depressed rural area.

Another major finding of this study was that the sex of the placed wage earner seemed to be related to wage level at time of employment. Using sex, age, type of disability and severity of disability as independent variables a significant relationship was sought between any one of these and the dependent variable, hourly wage at closure. A significant relationship was shown by a significantly high F score on a stepwise multiple regression analysis. As was seen in the review of the relevant literature on the relationship between sex and wage level, significant differences were to be expected between salaries of males and females. Males make a higher mean salary than females using almost any measure and in almost every field and almost every vocational setting. This finding is well documented in the literature in the work of Lynch (1973), Barrett (1979), Vetter and Babco (1980) and Brown (1981).

The other independent variable which showed a significant relationship to wage level on the multiple regression analysis was severity of disability. The finding was that while all men made higher mean hourly wages than did all females, severely disabled men made higher wages than all
other groups including non-severely disabled males. Walls (1982) was the one author cited who found this same relationship. Walls' rationale was that the severity measure may not be a true measure of handicap as was discussed above. Walls also explained that in his study, which was one of economic disincentives to employment, severely disabled males would not take a low paying job because they might thereby risk losing benefits which had been ruled due them by their very handicap to employment. Therefore these severely disabled males, so as not to put these benefits in jeopardy, only consented to taking employment if the pay were above, or a substantial substitute for, the benefits they received while not being obliged to or being able to work. Therefore they did not accept low paying jobs.

In the case of females this disincentive phenomenon did not show itself if that is indeed the relationship at work. Severely disabled females made less than non-severely disabled females. Perhaps women had less pressure to earn more, or perhaps they were not offered higher paying jobs.

The age and type of disability variables showed no significant relationship to wage level in the regression analysis. The pilot study had shown the age and sex variable to be somewhat related to wage level and so both were expected to show significant relationships in the larger study. The age variable, however, did not show significance in the larger study.
In the pilot study the conclusion reached was that older males made a higher salary than all other groups. In the larger study severely disabled males made a higher salary at time of placement than all other groups.

Future research will undoubtedly continue to look for relationships between sex and salary. Yet this study found that relationship less meaningful than the severity factor. It might be easy to dismiss the sex-salary relationship as simply another example of male-female wage discrimination. But if the severity of handicap factor can be made more sensitive and have more levels of severity more clearly defined, future research should study more precisely the relationship of severity to wage level in both males and females.

If the expectations of the first research question were that severely disabled clients are more difficult to place and of the second question that severely disabled made a lower wage, both expectations were met with surprising results in this study. As a matter of fact, if the severity factor currently used were considered accurate and precise, both questions were answered quite opposite to traditional expectations. Severely disabled clients not only were successfully placed just as frequently but also, once placed, males who were more severely disabled made higher wages than non-severely disabled males and females.
While the total result leads to only mixed conclusions due to the lack of precision in the dichotomous measure of severity, the questions of placement and wage level of severely disabled males and females are ones which need much more study. Examples of needed study are the areas of job discrimination against disabled women, the expense of job engineering and the type of jobs generally adapted to severely disabled to see if they are generally male oriented or female oriented jobs.

It is improbable that findings showing that males made a higher salary would be different in an urban setting. As Barrett and others point out: males make higher wages than females on average regardless of setting.

Since the population studied was rural and poor, the disincentive motive mentioned by Walls may be at work here since there was probably a great deal of public support coming to these clients in the form of Social Security, food stamps and other forms of assistance. It is suggested therefore that a study be performed comparing rural and urban severely disabled persons to get at the significant relationships. Also, as was suggested above, a better and more meaningful measure of severity of handicap needs to be devised if the relationships between employment factors and impairment factors are to be more fully understood.
Implications for Research

If the traditionally important variables are not related to placement success perhaps other client characteristics need to be studied. Perhaps the future investigator should examine a different set of data. Type and severity of disability may not be nearly as important to placement success as say previous job history, motivation, type of rehabilitation service or the quality of the rehabilitation process itself.

Relating placement success to certain types of clients may not be possible from traditionally accumulated data. More appropriate variables besides those mentioned above might be the client's status in the community, the client's personal values and the client's attitudes toward work. Disability, in fact, may have less impact on job success than does the way the disability is dealt with by the client, the professional rehabilitation counselor and the employer.

Other aspects of the client program of service which may be significantly related, but were not studied here are: the type and qualifications of the case manager/counselor the client is assigned to; the quality of the placement program itself; the prohibitions, restraints and permissiveness concerning who is accepted for services and
the intensity of competition for rehabilitation services.

As various client characteristics are studied in relation to placement in the future, it might also be appropriate to follow clients' employment experience through a period longer than the first 60 days as is done now in the state-federal rehabilitation program. In the past concentration seems to have centered much more on clients' rehabilitation experience and history rather than on their employment experience. It is analogous to a study of employed truck drivers who had been trained in a diesel school. If the training were subjected to great scrutiny and no analysis and examination of their work as truck drivers were made, we might miss out on a great deal of helpful information about their employment success. With rehabilitation clients, while it is commendable that rehabilitation counselors do not cling to their clients after they are placed successfully like some agency representatives do, it may be necessary to follow clients longer into their job experience. Counselors can help placed clients over the hard times which often present themselves beyond 60 days on the job.

Another area that needs further research is the use of telecommunications in remote and rural areas. As has been reported in this study, much effort was expended in the 1970's on rehabilitation services and other human services being provided by or being supported with telecommunications devices. Due, however, to lack of interest,
philosophical support and financial backing, the use of telecommunications declined. If the future will indeed be characterized by high technology: computer-assisted learning, mechanical banking, word processing and information systemization, telecommunications will become more common in all geographic areas including rural. More widespread use will also reduce the costs of equipment and its utilization. Telecommunications most likely will play a greater part in our lives as time passes and will permit rehabilitation professionals to avail themselves of that technology for communication, training and reporting.

Implications for Practice

Several cogent implications for practice are suggested by this study: First, rehabilitation counselors would do well to concentrate on the actual handicapping conditions of their clients. Concentration on the traditional dichotomous measure of severity may not contribute much in assisting disabled persons to become employed. Also, especially in a rural setting, counselors need to take into consideration the lack of choices in economically deprived clients' cultural experience. To the extent it is possible, counselors should attempt to provide broader experiences for their clients to enhance their employability. This can be done through training opportunities, temporary relocation or various work and personal adjustment programs.
It is incumbent on vocational rehabilitation counselors to assist their clients in overcoming barriers to employment whatever they may be. Blindness as a disabling condition is a greater barrier to some clients than to others. Amputation likewise handicaps some clients to a great degree; some less. The diagnoses of disability must be seen in the light of their effect on employability. State agency counselors in rural and urban settings will want to look for a rehabilitation facility whose staff makes vocational evaluation recommendations based on the individual client's functional limitations.

As often as possible counselors should follow their placed clients beyond the required 60 days. Particularly with a client whose work history is weak, two months is a short time to lend support as the client tries to adjust to the work setting and develop as a worker.

Counselors have been taking disincentives into account for a long time. Their clients who receive some financial assistance for their support may put those funds at risk if they start back to work. It takes a great deal of effort to find the proper training, schooling and job as suited to the individual and to set up and meet appropriate vocational goals. Often a client has worked long and hard to prove that disability insurance or another support payment is his due. As was implied in this study, the client will be very reluctant to give up that support in favor of employment which may look very insecure to someone who has
not worked for some time.

One more thought for practitioners suggested by the study is that the vocational rehabilitation of a handicapped person is a very complex phenomenon. Geographic setting, handicapping conditions and individual needs all must be taken into consideration. This complexity is best dealt with utilizing the synergy which results from teamwork. The rehabilitation counselor, the rehabilitation facility staff, the client, the family and the employer all must work together to identify and overcome barriers to employment and set the client on a career path suitable to the individual client's vocational limitations and assets.

This study has involved itself with two areas that have only been given sparse attention in the rehabilitation literature. Those areas are rural rehabilitation and rehabilitation outcome. The two combined have been subjected to only marginal research. This study makes a contribution to those areas of little research activity but of great importance for rehabilitation practitioners and their clients. If rural America is ever to be provided the rehabilitation and other human services it needs, researchers must take an interest in rural culture, service needs and especially the rural experience in the recent past. If there are areas of practice that call for change knowledge about what has been done well or poorly to date must be available.
To borrow from Cook, et al. (1981): "... before such pressing needs as developing methods for retaining rehabilitation professionals in rural areas, and determining the most effective and efficient models of service delivery to handicapped rural residents ..., basic information on the needs of rural handicapped persons, their concerns, desires, and how they interact with their environment is essential" (p. 59).

Rural rehabilitation and its relationship to culture, employment, professional issues and the future of service delivery offer a rich area for future research and study. The rewards to the researcher and the field of rehabilitation will be plentiful.
APPENDIX A

Four Categories

To Identify the Severely Disabled

When the client's disability is described under one of the four following categories, he/she is considered severely disabled.

1. Clients for whom the disability code is included in the following list (note that some impairments require additional qualifications to be considered severe):

   Severeley Disabling Conditions
   ...
   Blindness, both eyes
   ...
   Blindness, one eye, other eye defective
   ...
   Other visual impairments
   if, with correction, unable to obtain driver's license for visual reasons
   ...
   Deafness
   ...
   Hard-of-hearing
   if any of the following apply (based on 1973 ANSI): (a) At least a 55 dB loss, unaided, speech reception threshold (SRT) in the more useful ear; (b) At least a 55 dB loss, unaided, pure tone average (PTA) in the more useful ear; (c) Between 30-54 dB loss, unaided, SRT or PTA in the
more useful ear with either speech discrimination less than 50% or a statement from an otologist or an otolaryngologist which indicates progressive loss.

...Orthopedic impairment involving three or more limbs

...Orthopedic impairment involving one upper and one lower limb (including side)

...Orthopedic impairment involving one or both upper limbs (including hands, fingers, and thumbs) if both upper limbs are involved, and assistance of another person, or devices, is needed for activities of daily living

...Orthopedic impairment involving one or both lower limbs (including feet and toes) if locomotion is impaired to a degree that bilateral upper limb assistance devices are required, or the individual is unable to utilize public buses or trains

...Muscular dystrophy

...Multiple sclerosis

...Accidents and injuries involving the spinal cord

...Loss of at least one upper and one lower extremity (including hands, thumbs, and feet)

...Loss of one or both major upper extremities (including hands or thumbs) if one, requires upper limb assistive device, and loss is to the dominant extremity
Loss of one or both major lower extremities
   if bilateral at the ankle or above, or if one at
   midthigh that requires bilateral upper limb
   assistance devices, or individual is unable to
   utilize public buses or trains

Psychotic and psychoneurotic disorders and mental
   retardation.

Colostomies resulting from malignant neoplasms

Laryngectomies resulting from malignant neoplasms

Leukemia and aleukemia

Cystic fibrosis

Hemophilia

Sickle cell anemia

Epilepsy - if not seizure-free for two years

Heart conditions
   if classified 2C or worse in the New York Heart
   Association Classification as adopted by the
   American Heart Association

Respiratory system conditions
   if maximum breath capacity is less than 55 per-
   cent of predicted, or if there is shortness of
   breath on climbing one flight of stairs or walk-
   ing 100 yards on the level

Colostomies (from other than malignant neoplasms)

End-stage renal failure

Cleft palate and cleft lip with speech imperfections

Laryngectomies (from other than malignant neoplasms)

Aphasia resulting from intracranial hemorrhage,
   embolism, or thrombosis (stroke)
2. Other individual cases with documented evidence of loss and limitation determined, on the basis of diagnostic study, to be comparable to the disabling conditions listed above; i.e., must meet criteria a* and b. of the functional limitation factors listed below.

The functional limitation factors include those conditions, whether a single disability or a combination of disabilities, which enable the counselor and/or the Field Medical/Ophthalmological/Psychological Consultant to determine the following two criteria:

a. that there exists substantial loss of functional capacity and restriction of activity attributable to medical factors, such that any combination of the following applies to the client:
   1) unable to make use of public bus or train
   2) unable to perform sustained work activity for six hours or more
   3) disfigurement or deformity so pronounced as to cause social rejection
   4) speech is unintelligible to non-family members
   5) unable to climb one flight of stairs or walk 100 yards on the level without pause
   6) loss of manual dexterity or coordination sufficient that he/she is unable to button buttons, wind a watch, or write intelligibly
b. that the client will normally require multiple vocational rehabilitation services over an extended period of time.

3. All clients who were Social Security Disability Insurance (SSDI) beneficiaries (whether they met the Special Selection Criteria or not) at any time during the rehabilitation process.

4. All clients who were blind and/or disabled Supplemental Security Income (SSI) recipients (whether they met the Special Selection Criteria or not) at any time during the rehabilitation process. Aid to Aged (OAA) cases are not included.
### APPENDIX B

1980 Census Data on Five Counties

<table>
<thead>
<tr>
<th>County</th>
<th>Ross</th>
<th>Pike</th>
<th>Scioto</th>
<th>Lawrence</th>
<th>Adams</th>
<th>STATE</th>
</tr>
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<tbody>
<tr>
<td>population</td>
<td>65,004</td>
<td>22,802</td>
<td>84,545</td>
<td>63,849</td>
<td>24,328</td>
<td>10,797,630</td>
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<tr>
<td>pop. per square mile</td>
<td>93.9</td>
<td>51.5</td>
<td>137.7</td>
<td>140</td>
<td>41.5</td>
<td>263.3</td>
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<tr>
<td>pop. inside urbanized areas</td>
<td>0</td>
<td>4,603</td>
<td>41,371</td>
<td>33,353</td>
<td>0</td>
<td>6,538,206</td>
</tr>
<tr>
<td>urban</td>
<td>23,420</td>
<td>4,603</td>
<td>41,371</td>
<td>33,353</td>
<td>2,791</td>
<td>7,918,259</td>
</tr>
<tr>
<td>percent of total rural</td>
<td>64%</td>
<td>79.8%</td>
<td>51.1%</td>
<td>47.8%</td>
<td>88.5%</td>
<td>26.7%</td>
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<tr>
<td># rural</td>
<td>41,584</td>
<td>18,199</td>
<td>43,174</td>
<td>30,496</td>
<td>21,537</td>
<td>2,879,371</td>
</tr>
</tbody>
</table>
APPENDIX C

Observed Frequencies

(24 months, 100% population, calendar 1980 and 1981)

n = 184

Males 110
Females 74

Non-severely handicapped 129
Severely handicapped 55
Physically handicapped 101
Mentally handicapped 83
Age 30 or Under 98
Over 30 86

Successfully placed 119 (mean wage: $4.47 hourly)
Not placed 65
APPENDIX D

LEGEND

- Places of 100,000 or more inhabitants
- Places of 50,000 to 100,000 inhabitants
- SMSA central cities with fewer than 50,000 inhabitants
- Places of 25,000 to 50,000 inhabitants outside SMSA's

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LIST OF REFERENCES


Andrew, J.® (Ed.)® The Delivery of Rehabilitation Services. Menomonie, WI: Research and Training Center, University of Wisconsin - Stout, 1975.

Andrew, J.® (Ed.)® Legal Concerns of the Rehabilitation Counselor. Menomonie, WI: Research and Training Center, University of Wisconsin - Stout, 1976.


BRIEF. Washington, D.C., SRS/HEW, 3 (10), (11), 1970.

BRIEF. Role of Telecommunications in Vocational Rehabilitation. Gainesville: University of Florida Rehabilitation Research Institute, 1 (11), 1978.


Myers, D. *Rural rehabilitation opens every door.* _Journal of Rehabilitation, 1974, 40 (4), 31-32._


Proceedings of the Conference on Rehabilitation Services to Handicapped Seasonal and Migrant Farm Workers. San Jose, CA: San Jose State University, 1978.


Steinberg, L. Cultural factors in the rehabilitation process. Summary of short term training, California State University, Los Angeles, 1978.


Twomey, W. Placement of the severely handicapped. (Second Institute on Rehabilitation Issues) Institute, West Virginia: Research and Training Center, 1975.

Thurer, S. L. Women and rehabilitation. Rehabilitation Literature, 1982, 43 (7-8), 194-197.

U.S. House of Representatives.  H.R. 8070. Text of a Bill before the 93rd Congress.


Usdane, W. The placement process in the rehabilitation of the severely handicapped. Rehabilitation Literature, 1976, 32 (6), 162-167.


Vash, C. L. Employment issues for women with disabilities. Rehabilitation Literature, 1982, 43 (7-8), 198-207.


Washington Update. An intermittent publication of the National Rehabilitation Association, Washington, D.C.


