Factorial Identification of Characteristics of Blind Clients in Vocational Rehabilitation and Implications for Employment Outcomes

Monograph I: Dimensions of the Rehabilitation Service Delivery System

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Table of Contents

INTRODUCTION 1

Outcome Research and Vocational Rehabilitation as a System 3
Systems Focus on Client Dimensions 5
Research with Mixed Disability Groups 6
Research with Like Disability Groups 8
Research on Clients with Visual Impairments 10

PURPOSE 13

METHOD 15

Subjects 15
Variables in the Database 16
Procedure 17
Table 1: Client Characteristic Variables 18
Selection of Client Variables 24

RESULTS AND DISCUSSION 25

The Factor Analysis 25
Table 2: Factor Pattern for Client Variables 26
Factor 1. 33

Table of Contents--continued

Factor 2. 34
Factor 3. 35
Factor 4. 35
Factor 5. 36
Factor 6. 37
Unrelated Variables. 37

RECOMMENDATIONS 39

Client Dimensions and
Rehabilitation Outcomes 40
Differences in Client Dimensions by
Outcome Groups 41
Late Onset of Blindness 41
Figure 1: Client Dimensions by
Outcome Group 43
Vocational Potential 44
Public Assistance Dependency 44
Social Security Receipt 44
Family Size 45
Severity of Disability 45
Client Dimension Profiles for
Outcome Groups 45
Competitive Group Client
Profile 46
Figure 2: Competitive and
Sheltered Groups 48

Table of Contents--continued

Sheltered Group Client Profile 49
Homemaker Group Client Profile 49
Unsuccessful Closure Client Profile 50
Figure 3: Client Profiles: Homemaker and Unsuccessful Groups 51

SUMMARY 53

REFERENCES 57

APPENDIX 67

Table 3: Brief Computation of Service Dimension Indices 69
Sample Case of John Doe 72
Table 3a: Brief Computation of Service Dimension Indices 74
Figure 4: Client Profile: John Doe 77
Sample Case of John Doe (continued) 78

INTRODUCTION

The general purpose of this study was to establish underpinnings for an information system which can provide technical assistance to state and private rehabilitation agencies and service providers in the vocational rehabilitation process for blind and visually impaired persons. It is assumed that the process of vocational rehabilitation is a complex interactive organizational *system*, because it meets Churchman's (1968) criterion for a system: a series of elements linked together in a coordinated fashion for the overall objective of the whole. A major concern is to accomplish a better understanding of the rehabilitation system, which will aid administrators, planners, and managers in directing the system. This understanding will assist researchers in further understanding the dynamics of the system and will facilitate the activities of counselors and other direct service providers. Ultimately, the individual with a visual disability will benefit.

A key long-term goal of the approach taken is to continue to identify factors in the rehabilitation process which lead to heightened employment outcomes, reduce unsuccessful outcomes, and, particularly, to enhance competitive employment of clients who are blind or have low vision. An important perspective in the approach involves examining the rehabilitation service delivery system from a "macro" systems perspective rather than the typical "micro" perspective involving specific client characteristics or specific component services in a one-by-one fashion. By taking a macro, or a systems analysis approach, *dimensions* of rehabilitation activity can be established in important contextual domains.

Introduction

Recognition of the importance of a dimensional approach in rehabilitation goes back to early rehabilitation research (Scott, Davis, England, & Lofquist, 1958). These authors concluded that the study of interrelationships among their criteria of interest and the establishment of *a minimum number of criteria which would account for most of the variability* was one of the most neglected, yet potentially most rewarding, aspects of rehabilitation research.

Some possible domains for the vocational rehabilitation system and its activities may relate to: (a) the client, (b) service delivery, and (c) the environmental context. By taking a systems perspective and a dimensional approach, a large number of client characteristics can be synthesized into a small number of key client dimen- sions. Also, numerous client services and specific service-related information could be clustered into principal dimensions of service delivery, and information relating to the larger socioeconomic, political, and physical environment could be distilled into a few, most important environmental dimensions. Such a macro systems approach, and the establishment of dimensions of rehabilitation activity, should aid substantially in the dynamics and interrelationships of this system. Greater understanding of the system components is expected to aid researchers, administrators, and managers in conceptualizing and directing the system and to aid practitioners in their operations within the system. The outcomes of system modifications and environmental changes would be more predictable.

Administrative goals would be more reliably achieved; counselor effectiveness, improved; and client outcomes, enhanced.

Outcome Research and Vocational Rehabilitation as a System

Given the assertion that *prediction* -- whether in the form of administrative decision or counselor judgment -- is the central professional activity in the provision of rehabilitation services, it is not surprising that rehabilitation outcome prediction research has been prevalent for well over three decades (Bolton, 1979a, 1987). Many outcome studies have been reported with general vocational rehabilitation samples. Unfortunately, these prediction studies are generally difficult to compare or are not comparable for several reasons (Bolton, 1979a). These studies have differed in composition of samples with respect to type of disability, eligibility criteria, predictor variables, outcome variables, and in analysis techniques. Even biographical information differed among studies because different agencies collect and/or record somewhat different data.

Rehabilitation outcome prediction studies can be viewed as attempts to investigate an organizational system. Vocational rehabilitation as a system provides a multitude of pieces of information (termed "systems data" or "variables") that are descriptive of the inputs, process, results, and outcomes of the system. Studies of systems, such as a vocational rehabilitation system,

tend to measure many specific variables which, for historical, empiracle, or intuitive reasons, are thought to be important, or at least germane, to process and outcomes. The problem which is quick to develop is that the researcher's list of specific variables thought to be "important" tends in the direction of all-inclusiveness. Different researchers may choose different subsets of variables to describe the system, as previously noted, making comparisons between studies problematic in rehabilitation outcome research.

The problem is one of complexity. Vocational rehabilitation as an organizational system can produce large quantities of data which describe system activities and problems. Whatever subset of variables that is chosen for scrutiny only partially represents the highly complex, interrelated system. Such a dynamic, interactive system, viewed incompletely as arrays of system records, presents significant challenges in understanding and management. Given the complexity of the system and the poor comparability of measures chosen by different investigators, it is not surprising that a consensus regarding results has not emerged. An improved approach is needed if progress is to be made in linking client attributes, appropriate services, and appropriate responses to environmental circumstances to achieve effective system management and enhanced rehabilitation outcomes.

Systems Focus on Client Dimensions

The approach taken in this study, consistent with the recommendations of Eber (1975), was to use data reduction models to aid in conceptualizing key system dimensions; to focus on a single disability group (that of rehabilitation clients who are blind or severely visually impaired); and to employ appropriate multivariate statistical methods. This approach was applied to the specific domain of *client characteristics* in this monograph. Very few studies have examined client characteristics as dimensions, rather than as specific variables (Brown, Gordon, & Diller, 1983). This is unfortunate because understanding client dimensions and their relationship to client outcomes is necessary for the enhancement of rehabilitation outcomes (Wright, 1980). More specifically, the problem is that there are countless possible client variables (e.g., age, sex, education, disabilities) and subsets of these variables (e.g., client demographics, client abilities, and client personality) which can be expected to interrelate (Bolton, 1979a; Miller, Kunce, & Getsinger, 1972). For example, clients with higher levels of education are more likely to have higher incomes at referral, fewer dependents, and less dependency on "transfer payments" (various forms of public assistance including welfare, Social Security, etc.). Such a combination of related variables needs to be considered as a dimension, such as "socioeconomic status," instead of focusing on individual variables. A uni-variate examination of specific client variables is

overly simplistic and neglects these interrelationships. The apparent need is an understanding of client characteristics from a macro or multivariate perspective to form empirically-based client dimensions which can serve as focal points for conceptualization and consistent measurement of client characteristics across studies.

Research with Mixed Disability Groups

The examination of client variables in rehabilitation has taken two broad directions. One view has considered client characteristics of subjects with a variety of different disabilities. The other has considered client attributes within a single disability sample. A major problem with both of these directions of research is *noncomparability of methods* and consequent inconsistency and noncomparability of results. Another major problem with the approach, which examined client characteristics across mixed disability groups, has been *noncomparability of samples* and the consequent high lack of generalizability of results.

One of the first large-scale investigations of the rehabilitation process which included attention to client characteristics was conducted by Eber (1966) in Alabama. This study attempted to identify dimensions of vocational rehabilitation processes. Eber (1966) began by partitioning the generic state rehabilitation system into three main domains: (a) the client and program (61 variables), (b) the counselor and services (14 variables), and (c) the community (69 variables). After selecting

and gathering data on these variables for each of these three domains from a sample of 502 clients, Eber separately factor analyzed the measures in each domain. The 61 client and program variables represented a broad range of information, (e.g., work status at referral, sex, marital status, work history, and months from acceptance to closure). The factoring of these client and program measures resulted in the following ten factors: (1) *adequacy of vocational adjustment at acceptance* (i.e., income, work status at acceptance), (2) *sex*, (3) *maturity* (i.e., prior to disability work history, wages) (4) *client acceptance of public assistance services*, (5) *psychiatric disability*, (6) *vocational training services*, (7) *long-term vocational training* (i.e, training and maintenance expenditures), (8) *physical restoration services* (i.e., medical, surgical services expended), (9) *vocational adequacy at closure* (i.e., work status), and (10) *vocational adequacy at follow-up* (employment promotion record, wages, etc., after one year). Eber further defined client features by categorizing his ten factors as representing the three main areas of: (1) client characteristics, (2) service factors, and (3) outcome criterion factors. Factors 1 through 5 were seen as client characteristics, 6 through 8 as service factors, and 9 and 10 as outcome criterion factors. As derived, these domains and the factors that comprised them were viewed as a set of general dimensions which compose the combined vocational rehabilitation system studied by Eber.

From the foregoing, it is easy to see Eber's (1966) study as a milestone in rehabilitation research. The

study evaluated information from a large number of subjects in tandem with variables representing a comprehensive overview of economic, vocational, and psychosocial client attributes. This information was then reduced through factor analysis. The information was also related to rehabilitation outcomes. While it is evident that this study has provided a framework and initial attempt at understanding important client characteristics, it has problems and limitations. Several difficulties preclude the application of Eber's (1966) findings to the general rehabilitation population. The client sample was from a *single* southern state, not demographically representative of other regions of the country, thereby restricting generalizability. So, too, Bolton (1987) has criticized the lack of comprehensive outcome measures in this study, noting that the employment success composites were chiefly economic measures. However, on the balance, this study is a good model for future research because it demonstrated a way of identifying vocational rehabilitation dimensions and relating them within the organizational system.

Research with Like Disability Groups

It is expected that client dimensions may vary as a function of the composition of the group under consideration. Nowhere does this idea seem more apparent than when related to the question of the homogeneity of client disabilities. This could be why, early on, researchers argued that because subjects differ in diagnosis, they

will react differently to the same treatment (Nelson, 1976). Despite the implied objection to combining disability groups, the majority of studies which have examined the rehabilitation process have included wide age ranges and mixed disability samples (e.g., Sneath, 1967; Greenblum, 1977, 1979; Worrall & Vandergroot, 1980, 1982).

Other authors and researchers have realized the importance of sample homogeneity and specificity and have studied samples of rehabilitation clients with a specific disability (Bolton, 1979b; Kirchner & Peterson, 1982). These specific samples have included psychiatric patients, clients who were physically disabled, learning
disabled, deaf, blind, and the like (Baumeister & Bartlett, 1962a, 1962b; Bolton, 1971, 1972; Kassebaum & Bauman, 1965; Krishnaswami, 1984; Rogers, Anthony, & Jansen, 1988; Wright, 1980). From this view, most researchers have sought to answer specific questions with distinct samples. For instance, Growick and Stueland (1979) demonstrated that membership in specific disability groups (e.g., mentally retarded) effected rehabilitation outcomes *differently*. Moreover, Miller, Kunce and Getsinger (1972) found that deaf client rehabilitation could be predicted from multidimensional client characteristics information.

While other studies have examined client characteristics, they have focused on general client biographical data as predictive variables, and these studies are difficult to compare because of methodological differences (e.g., client referral criteria, data collection

procedures, methods of data analysis) and statistical difficulties (Bolton, 1979b; Giesen & Ford, 1986a; Reagles, Wright, & Butler, 1971). Although few in number, such studies have confirmed that use of specific disability samples can lead to progress in rehabilitation research (Growick, 1976; Kunce, Miller & Cope, 1974; Reagles, Wright, & Butler, 1971; Miller, Kunce, & Getsinger, 1972). Similarly, after reviewing research in the field, Bolton (1979b) recommended that no mixed disability groups be employed in a single study. With these considerations in mind, the current study focuses specifically on adult clients of state vocational rehabilitation agencies who have severe visual disabilities.

Research on Clients with Visual Impairments

Prior to 1985, only a handful of studies of clients with severe visual disabilities had empirically sought to identify factors predictive of or associated with rehabilitation outcomes (e.g., Bauman & Yoder, 1963, 1964; Crouse, 1974; Knowles, 1969; Scholl, Bauman, & Crissey, 1969). While these studies did examine client characteristics, as well as other data, as potential predictors of outcome, none took a multivariate or dimensional approach in clustering variables which were associated with employment outcome. More recent research by Giesen and his associates (Giesen, et al, 1985; Giesen & McBroom, 1986; Giesen & Graves, 1987) reviewed the earlier outcome research and have applied

multivariate methods to identify variables predictive of outcome groups.

Research with visually impaired subjects has been problematic in that it is frequently of a descriptive rather than an inferential nature, describing clients and presenting the characteristics only of clients who have been successfully rehabilitated (Bauman & Yoder, 1963). Additional problems have related to the fact that most investigations have restricted themselves to a specific geographic region (Knowles, 1969), a single state agency (Crouse, 1974), or non-vocational aspects of adjustment to blindness (Ammons, 1978). One exception is Bauman and Yoder's (1966) follow-up study of 406 blind clients from six state agencies. These researchers divided the sample into well adjusted, intermediate, and poorly adjusted clients and evaluated adjustment levels in relationship to competitive employment. Interestingly, vocational training, placement services, or a combination of both were effective in helping well adjusted clients to secure and maintain competitive employment.

While some additional research has considered rehabilitation outcomes for blind and visually impaired clients, these studies are also fraught with problems. After reviewing a number of studies (e.g., Bauman & Yoder, 1963, 1964; Crouse, 1974; Kirchner & Peterson, 1981; Knowles, 1969; Scholl, Bauman, & Crissey, 1969), Giesen et al. (1985) reported numerous difficulties both in individual studies, and across investigations (e.g., problems related to: (a) the consideration of client outcome variables (e.g., only economic or only

psychosocial), (b) failure to consider socioeconomic factors such as unemployment rate, and (c) failure to differentiate between classes of *successful closure* such as competitive, sheltered, or homemaker). Another interesting problem was the fact that variables which were seen as important in one study (e.g., intelligence) were most often *not* included or not available in other studies (Giesen & Ford, 1986a; Miller et al, 1972; Reagles et al., 1971).

PURPOSE

While past research has demonstrated *how* to establish client dimensions and the need for relating this information to successful rehabilitation, previous research has only partially given administrators and service providers the assistance they might employ to facilitate the rehabilitation process. If rehabilitation personnel are to use limited resources to the fullest potential, an appreciation of the key client factors for rehabilitants who are visually impaired is needed at a macro system level. Also, the relations of such client dimensions to outcomes need to be further clarified. With these objectives in mind, the primary purpose of this study was to identify a salient and useful set of dimensions which reveal key client characteristics from a large, nationally representative sample of blind and visually impaired vocational rehabilitation clients. A secondary purpose was to illustrate the utility of these dimensions by describing rehabilitation outcome groups in terms of those identified client dimensions.

METHOD

Subjects

Case record data of 971 legally blind vocational rehabilitation clients from the National Blindness and Low Vision Database (NBLV) were used for analysis. This database and its establishment have been described in detail elsewhere (Giesen & Graves, 1987; Giesen, 1988, 1989). A summary description of the database and its extension and enhancement for the present study are presented here.

Case files of 619 legally blind or more severely visually impaired individuals (primary disability RSA code of 100-119) closed in status 26 (successful) and status 28 (unsuccessful) during federal fiscal years (FY) 1978 to 1980 (10/1/77 to 9/30/80) from the states of Florida, Kansas, Mississippi, and Ohio were abstracted. Subsequently, the database was expanded and enhanced by the addition of records from Arizona, Mississippi, New Jersey, and Washington during FYs 1985 and 1986 (10/1/84 to 9/30/86), bringing the total number of cases to 971 (Giesen, 1989). States were strategically chosen to obtain a rural/urban representation, suitable national geographic representation, state agency structure type representation, and state population size representation.

Systematic quota sampling resulted in the selection of every 17th case file from a master list of all cases closed in FYs 1978 through 1980 (every 14th case for FYs 1985 and 1986), thus ensuring that the sampling would be distributed across the vocational rehabilitation

client population of each state. The sampling method resulted in each state being represented in proportion to the total number of clients served and to the successful/unsuccessful closure ratio for each state.

The sample was composed of 458 males and 513 females with an average age of 42.8 (SD=19.1) years. The race breakdown was 72.7% white and 27.3% nonwhite.

Variables in the Database

On the basis of literature reviews, case file reviews, and identification of previously unexplored variables, information abstracted directly from case files by a team of data collection specialists resulted in a kernel of 136 variables. Basic client information was obtained from the R-300, R-911, or similar form used by the state, and yielded 71 R-prefixed ("reporting form") variables. Case file information provided 32 C-prefixed ("case file") variables, including specific information on type and number of additional eye disabilities; type and number of other (noneye) disabilities; receipt of mobility training; use of adaptive aids; available ability and achievement test scores; occupational history information; job titles; Dictionary of Occupational Titles (DOT) codes; counselor and service facility locations; counselor information; etc. Also, 28 E-prefixed, "expenditure" category variables were recorded.

For data analysis, display, internal validity, or exploratory purposes, a sizeable number of new variables were

created by recoding, regrouping, and mathematical or logical transforming of original variables.

At the time of this writing, the National Blindness and Low Vision Database contains over 265 variables for each case. Additional information regarding variables in the database can be obtained by contacting the principal investigator.

Procedure

Variables from the database selected for examination in the present study are shown in Table 1 along with how the variables were coded and descriptions of special variables. These are the variables in the database which were judged as broadly related to the client as characteristics or as intake conditions associated with the client. A restriction for selection of a client characteristic-related variable was the extent of missing data, because variables with substantial missing data may tend to show relationships which are restricted to particular subsets of the sample and restrict analysis sample size.

Table 1
Client Characteristic Variables

Variable Name	Description	Coding[1]
R6A	Referred by Individual	a
R6B	Referred by Educational Institution	a
R6C	Referred by Health Facilities	a
R6D	Referred by Welfare and Oth-er	a
R6E	Referred by Private Organizations	a
R7	Age at Referral	a
R9A	Sex (F/M)	a
R11A	SSDI Received at Referral	a
R12A	SSI Received at Referral	a
R13A	White or Non-White	a
R16	Spanish Surname	a
R21	Previous Closure Within 36 Months	a
R23A	Currently Married	a
R23B	Previously Married	a

[1]a = Indicator, Yes/No, or dichotomous variable coded 1/0 for presence/absence of variable attribute

Table 1 (continued)

Variable Name	Description	Coding
R24	Number of Dependents	
R25	Total Number in Family	
R26	Highest Grade Completed	
R27B	Wage Earner Group at Referral	b
R28	Weekly Earnings at Referral	
R29	Total Monthly Family Income at Referral	
R31	Public Assistance Month Amount at Referral	c
R32	Time on Public Assistance at Referral	d

b = Coded 1 (Competitive), 2 (Sheltered), 3 (Home maker), and 4 (Unemployed)

c = Coded 0 to 9 in $50 increments beginning with 0 if $0.00 - $149.99 through 9 if $600 and over

d = Coded 0 (not receiving public assistance), 1 (less than 6 months, 2 (6 months or more but less than 1 year).

Table 1 (continued)

Variable Name	Description	Coding
R33B	Primary Support at Referral = Family & Friends	a
R33C	Primary Support at Referral = Transfer Payments	a
R33D	Primary Support at Referral = Personal	a
R34	Institutionalized at Referral	a
R36A	Referred by Social Security Administration	a
R37A	Social Security Recipient at Referral	a
C2	Age at Onset of Blindness	
C3	Visual Efficiency Percent Loss	
C8	IQ Measures	*

* = See Text

Table 1 (continued)

Variable Name	Description	Coding
C11	Occupational Goal Skill Level at First IWRP	*
C14	Skill Level of Previous Occupation	
C15	Months From Previous Occupation to Referral	
C16	Years in Previous Occupation	
R72C	Primary Disorder of Eyeball	a
R72D	Primary Disorder of Cornea & Sclera	a
R72E	Primary Disorder of Lens	a
R72F	Primary Disorder of Uveal Tract	a
R72G	Primary Disorder of Retina	a
R72J	Primary Disorder of Eye - Not Specified	a

Table 1 (continued)

Variable Name	Description	Coding
R72C	Primary Disorder of Eyeball	a
R72D	Primary Disorder of Cornea & Sclera	a
R72E	Primary Disorder of Lens	a
R72F	Primary Disorder of Uveal Tract	a
R72G	Primary Disorder of Retina	a
R72H	Primary Disorder of Optic Nerve Pathway	a
R72J	Primary Disorder of Eye - Not Specified	a

Table 1 (continued)

Variable Name	Description	Coding
NDIS	Number of Nonvisual Disabilities	
NEDIS	Number of Eye Disabilities	
TOTDIS	Total Number of Disabilities	
YDPR	Years Disabled Prior to Referral	
SEVDIS2	Severe Secondary Disability	a
HEAIMP	Hearing Impairment Severity	e

e = Coded 0 (no hearing impairment), 1(mild), 2 (moderate), 3 (severe), 4 (profound hearing loss)

Method

Selection of Client Variables

Most of the variables from the NBLV Database selected for examination in this study were obviously characteristics of clients. Some variables warrant comment on why they were included or how they were coded. The IQ measure has considerable missing data, but the authors felt strongly that this variable should be included. Thus, rather than substituting the overall mean, the mean for each outcome group was substituted for missing data for cases in each outcome group. (See footnote b in Table 1.) The occupational goal skill level at the first Individualized Written Rehabilitation Plan (IWRP) is a skill level measure of specific occupations (the Total Vocational Quotient). While it is true that this variable is not known until the vocational goal is established, it was included as an indirect measure of client motivation and aspiration, lacking any other measure in this area. Variables R72C to R72J were derived from the primary eye disability diagnosis of the client. While other studies have included eye disability severity measures, this is perhaps one of the first studies to include attention to the client's *type* of eye disability when entering the rehabilitation process.

RESULTS AND DISCUSSION

The Factor Analysis

In an effort to evaluate underlying client dimensions, a factor analysis was performed using SPSSX, Release 2.1 (SPSS Inc., 1986). The total correlation matrix was submitted to a principal components analysis. Based on examinations of the scree test results and percents of variance accounted for by the factors, a six-factor solution, accounting for 33.9% of the variance, was selected. Both an oblique (Oblimin) and the orthogonal (Varimax) rotation solutions were examined. Differences were negligible, so the Oblimin rotation solution was chosen for interpretation. The rotated factor loadings greater than .15 for all variables, as well as eigenvalues, are displayed in Table 2. In considering the individual variable loadings, only weights of +/- .3 or greater were generally seen as interpretable (Nunnally, 1967), although this was a criterion to which there was not always strict adherence. The single largest loading for every variable was seen as a *major* loading, with additional loadings viewed as *minor*.

Table 2

Factor Pattern for Client Variables

VARIABLE	DESCRIPTION	FACTORS					
		I	II	III	IV	V	VI
R6A	Referred by Individual		.22	.17	-.60	-.24	
R6B	Referred by Educational Institution	-.39	-.21	-.19			
R6C	Referred by Health Facilities					.25	
R6D	Referred by Welfare and Other				.57		
R6E	Referred by Private Organizations	.16					
R7	Age at Referral	.84					
R9A	Sex (F/M)		-.19	-.22	-.16	.20	

Table 2 (continued)

VARIABLE	DESCRIPTION	FACTORS					
		I	II	III	IV	V	VI
R11A	SSDI Received at Referral		.17	.19	.44		
R12A	SSI Received at Referral	-.23	-.25	.57			
R13A	White or Non-White		.26	-.25			
R16	Spanish Surname						
R21	Previous Closures Within 36 Months	-.18		.28	-.15		
R23A	Currently Married	.30				-.73	
R23B	Previously Married	.26	.19			.59	
R24	Number of Dependents	.17	.18	.23		-.53	
R25	Total Number in Family	-.29	-.16		.17	-.52	-.17

Table 2 (continued)

VARIABLE	DESCRIPTION	FACTORS					
		I	II	III	IV	V	VI
R26	Highest Grade Completed	-.23	.66				
R27B	Wage Earner Group at Referral		-.47		.45	.16	
R28	Weekly Earnings at Referral		.57		-.33	-.20	
R29	Total Monthly Family Income at Referral		.26	-.21		-.46	
R31	Public Assistance Month Amount at Referral			.68			
R32	Time on Public Assistance at Referral		-.25	.79			

Table 2 (continued)

VARIABLE	DESCRIPTION	FACTORS					
		I	II	III	IV	V	VI
R33B	Primary Support at Referral = Family & Friends	-.38	-.40	-.63		-.27	
R33C	Primary Support at Referral = Transfer Payments	.32		.65	.33	.28	
R33D	Primary Support at Referral = Personal		.55		-.38		.16
R34	Institutionalized at Referral	-.25	-.28				.16
R36A	Referred by Social Security Administration				.45		
R37A	Social Security Receipt at		.15		.50		

Referral

Table 2 (continued)

VARIABLE	DESCRIPTION	FACTORS					
		I	II	III	IV	V	VI
C2	Age at Onset of Blindness	.90					
C3	Visual Efficiency Percent Loss						
C8	IQ Measures		.49	-.20			-.21
C11	Occupational Goal Skill Level at First IWRP	-.40	.44				-.21
C14	Skill Level of Previous Occupation		.56				
C15	Months From Previous Occupations to Referral	.28					.15

Table 2 (continued)

VARIABLE	DESCRIPTION	FACTORS					
		I	II	III	IV	V	VI
C16	Years in Previous Occupation	.53				.18	
R72C	Primary Disorder of Eyeball						
R72D	Primary Disorder of Cornea & Sclera						
R72E	Primary Disorder of Lens	.23	-.23		-.29		-.18
R72F	Primary Disorder of Uveal Tract						
R72G	Primary Disorder of Retina		.16		.30	-.20	.22
R72H	Primary Disorder of Optic Nerve Pathway	-.21					

Table 2 (continued)

VARIABLE	DESCRIPTION	FACTORS					
		I	II	III	IV	V	VI
R72J	Primary Disorder of Eye Not Specified						
NDIS	Number of Nonvisual Disabilities	.39					.58
NEDIS	Number of Eye Disabilities	-.24					.67
TOTDIS	Total Number of Disabilities						.89
YDPR	Years Disabled Prior to Referral	-.44		.20			.19
SEVDIS2	Severe Secondary Disability					-.16	.19
HEAIMP	Hearing Impairment Severity						.32
	Eigenvalues	4.17	3.37	2.57	2.62	2.08	1.85

Factor 1

This factor reflected characteristics associated with **late onset of blindness**. Major loadings were obtained for age at referral, age of blindness onset, length of time at most recent occupation, lower (negative loading) occupational goal skill level, a negative loading for years disabled prior to referral indicating fewer years disabled prior to referral, decreased likelihood of referral from an educational institution, and increased time from a previous occupation to referral. Secondary loadings occurred for receipt of primary support at referral from transfer payments, nonreceipt of support at referral from family and friends, lesser total number in family, and a greater number of disabilities in addition to blindness.

This client dimension illustrated considerable consistency across a variety of age, employment, and disability related factors. The factor suggests a set of characteristics which are associated with persons experiencing blindness at a late point in their lives. It appears that with longevity comes substantial work experience as well as additional disabilities, probably associated with aging, a greater readiness to seek rehabilitation services once disability has impacted their lives, but lowered occupational aspirations. Other associated characteristics suggest little contact with educational facilities, and a period of unemployment before referral, perhaps prolonged by receipt of transfer payments. Related research has shown that several similar variables (age,

employment, age at disability onset) to be important client rehabilitation *outcome* indicators (Giesen & Ford, 1986a; Miller, et al., 1972; Thomas et al., 1974).

Factor 2

This factor was viewed as characteristics associated with **vocational potential**. Major and minor loadings were related to: (a) educational level and intelligence (highest grade completed, IQ measures, not institutionalized at referral); (b) competitive employment history (weekly earning at referral, skill level of most recent occupation, primary support at referral from personal and private sources, and not from family and friends, work status at referral); and (c) indirect motivation (subsequent occupational goal, individual referral). Race (white) also showed a somewhat weaker loading on this factor. This client dimension presents what could be viewed as a "productive coping" lifestyle, possibly due to the client's educational level, intellectual ability, or continued employment. This factor bears a strong resemblance to Eber's (1966) first client factor of "adequacy of vocational adjustment at acceptance." Previous studies have indi- cated a strong relationship between successful rehabili- tation outcomes and client adequacy or positive coping styles, previous employment, and education/training (Anthony & Buell, 1974; Barry, Dunteman, & Webb, 1968; Growick, & Stueland, 1979; Reagles, et al., 1971; Kunce, et al., 1974). Also, this client dimension supports research which has illustrated the importance of

client intelligence in rehabilitation outcomes (Ben-Yishay, Gerstman, Diller, & Haas, 1970; Miller et al., 1972).

Factor 3

This dimension was dramatically different, depicting many facets of **public assistance dependency**. Major loadings portrayed this client dimension as related to time on public assistance at referral, monthly amount of public assistance at referral, receipt of SSI, and primary support from transfer payments (and not from family and friends) at referral. Other noteworthy loadings were for previous closure during the last three years, race (nonwhite), lower IQ estimate, lesser total family income, more years disabled prior to referral, and sex (male). This variety of associated indicators for this dimension suggests a pattern of prolonged reliance on public assistance which may be difficult to ameliorate. It is also interesting to note that although this dimension was fiscally related, none of the variables defining disability severity or number of disabilities were shown to load on this factor. This suggests that the fiscal dependence of this dimension is *not* strongly related to the client's age of disability onset, age of referral, or total number of disabilities.

Factor 4

Surprisingly unrelated to Factor 3, this factor was

labeled as **Social Security receipt**. This factor showed three sets of associated characteristics: (a) agency
referral sources (referred by welfare, the Social Security Administration, or other similar organizations; and not by an individual); (b) transfer payments (receipt of transfer payments such as Social Security or SSDI
support not from personal or private sources, and a trend toward a nonwage-earning occupational group at referral); and (c) presence of retinal rather than lens disorders.

It is interesting to note that retinal disorders were found to be associated with the constellation of characteristics associated with this factor. Giesen et al., (1985) reported that of the retinal disorders, diabetic retinopathy was the most prevalent, followed by macular degen- eration, and retinitis pigmentosa. Diabetic retinopathy was more prevalent in homemaker and unsuccessful outcome groups; macular degeneration was most prev- alent in the homemaker group; and retinitis pigmentosa was most prevalent in the sheltered outcome group. Sex (female) was weakly associated with this factor, as well. In general it appears that the characteristics associated with this factor may be related to a *non*-competitive employment outcome. Further attention to this issue is warranted.

Factor 5

Characteristics associated with **family size** comprised this factor. Major loadings were exhibited for currently

married, not previously married, total number in family, number of dependents, total family income, and non- receipt of transfer payments at referral. This factor
is rather clearly formed in this study and is suggestive of Eber's factor of "social maturity."

Factor 6

The last factor was clearly **severity of disability**. Major loadings were obtained for total number of disabilities, number of eye disabilities, number of additional noneye disabilities, and hearing impairment. Other weaker associations were shown for lowered occupational goal, lowered IQ measure, and presence of retinal disorders.

Unrelated Variables

In an effort to evaluate a wide band of client characteristics, an extensive number of variables were selected for inclusion in the current study. Unexpectedly, and exclusive of the indicators for types of eye disorders, six variables did not load "strongly" (.30 or greater) on any of the six factors. There were, however, two of these six which approached .30: Previous closure within 36 months, which loaded highest (.28) on Factor 3; and race, which loaded marginally on Factor 3 (-.25) and Factor 2 (.26). These loadings were discussed in relation to the factor of relevance. The other four variables with low loadings were sex (highest loading of -.22 on Factor

3), Spanish surname (highest loading of .13 on Factor 4), visual efficiency percent loss (highest loading of -.12 on Factor 4), and presence of severe second disability (highest loading of .19 on Factor 6). The interpretation advanced here is that a low loading on the factors does not totally exclude the variable as an important client characteristic nor does it negate the usefulness of the variable in predicting outcome. Examination of the factor loading matrix for sex indicates it is weakly positively related to Factors 1 and 6 and weakly negatively related to Factors 2, 3, 4, and 5. The problem is one of multi- collinearity. The univariate information provided by the sex indicator is already incorporated into the factor by the pattern of intercorrelations of sex with other variables. The information provided by the sex indicator is incorporated indirectly through other correlated variables which contain redundant information to some extent. A similar interpretation for the severe secondary disability variable can be made in terms of its intercorrelations with the other disability indicators associated with Factor 6. The very weak loading of visual efficiency suggests a statistical range restriction phenomenon. The range of visual efficiency scores is restricted, and this variable is not very important when the client sample in the database is "restricted" to blind and *severely* visually impaired persons. The lack of relationship of Spanish surname is also viewed as a range restriction phenomenon because it was characteristic of only 4.8% of the sample.

RECOMMENDATIONS

Overall, these results are supportive of six distinct, independent client dimensions. These dimensions represent efficient means of describing a broad range of client characteristics using a multivariate or systems analysis approach. Rehabilitation professionals and agency administrators who wish to streamline and reduce unnecessary documentation should use these factors as central core dimensions on which to retain information descriptive of clients and begin to think of client characteristics in terms of these dimensions. Specific variables with high loadings could be selected as most representative of the dimension and given weightings proportional to obtained factor loadings. This approach should reduce and limit the pieces of information needed for case documentation, including time and associated costs, without loss of the most meaningful information.

The nature of factor analysis is such that it is a reduction of redundant information in a set of variables. The dimensions identified in this study provide the advantage of the ability to separate the sets of client characteristics and to examine them more or less inde- pendently of one another. Having dimensions on which to gauge clients, however, does not preclude the occur- rence, in some client groups, of interrelated patterns of client characteristics. In fact, this would be expected to occur.

It might be expected that characteristics of occupational history, age of onset of blindness, or presence of

additional disabilities would be associated with a factor. It is also possible that a given client, or client group,
could "score high" on several separate factors, such as
public assistance dependency *and* Social Security receipt. This study is of the chosen set of measurements themselves, the possible dimensions of client character- istics, and does not restrict the variety of possible combinations of such dimensions for sub-groups of clients. The study of the occurrence of characteristic clusters of clients with shared characteristics is an interesting topic for subsequent examination. A variety of other client characteristic profiles across the client dimensions are possible and can be described in a six-dimensional arrangement rather than trying to deal with 48 individual variables.

Now we shall turn to how these client dimensions may be used to describe client groups, and the secondary purpose of this study is addressed: To relate client dimensions to rehabilitation outcomes. Additional data arrangements are now reported where the dimensions are treated as dependent variables and are used to describe client employment outcome groups.

Client Dimension and Rehabilitation Outcomes

Outcome in the database was viewed in terms of four outcome groups: (1) competitively employed, (2) sheltered workshop closure (noncompetitively employed), (3) homemaker closure, and (4) unsuccessful closure. To illustrate the usefulness of the client factor dimensions,

two approaches were taken. The first was to examine how the rehabilitation outcome group of the client can be described in terms of the six client dimensions. The question of interest here is whether there are signi-
ficant differences among the six client dimensions for the four outcome groups.

The second approach was to describe each outcome group in terms of a profile of the six client dimensions. Such profiling of these client groupings was considered
consistent with and most appropriate for the multi- variate systems approach taken in this study. For these tasks, factor scores transformed to standardized scores with a mean of 0 and a standard deviation of 10 (T-scores) were used.

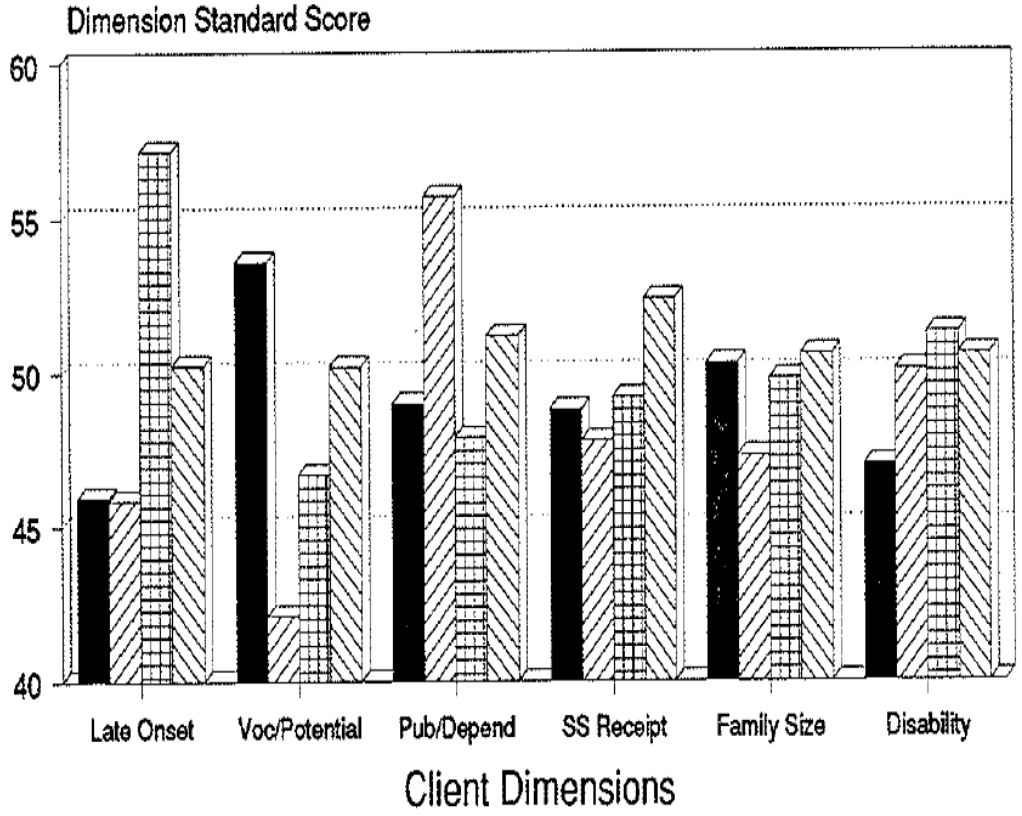
Differences in Client Dimensions by Outcome Group

In an effort to determine if any differences between the outcome groups for each of the six factors were suggested, a one-way analysis of variance (ANOVA) was conducted with the four outcome groups serving as the grouping variable. Six analyses were performed, one for each of the six client dimensions. Fisher's LSD *post hoc* tests were performed when appropriate.

Late onset of blindness. Significant differences were found among the outcome groups F (3, 607) = 61.86. The mean scores for each group are shown graphically in the first bar cluster of Figure 1. The LSD

test, used here and for subsequent pairwise compar- isons, indicated that the competitive and sheltered outcome groups were low and did not differ on this factor; the unsuccessful group was approximately "average"; and the homemaker group was highest. This pattern suggests that high values on the characteristics associated with the late onset factor may suggest likelihood of homemaker closure, and conversely, low values may suggest competitive or sheltered closure.

Figure 1. *Client Dimensions by Outcome Group*



Recommendations

Vocational potential. For this dimension, significant differences were found between outcome groups, *F* (3, 607) = 33.95. Shown in the second bar cluster, all outcome groups were significantly different. Considering only this specific client dimension, the sheltered closures present at referral as lowest on this dimension, followed by the homemaker group, then the unemployed group, with the competitive group highest on the dimension. It is noteworthy that the unsuccessful group is most similar to the competitive group on this client dimension. This is a more specific instance of findings of broad similarities between competitive and unsuccessful outcome groups (e.g., Giesen & McBroom, 1986).

Public assistance dependency. Shown in the third bar cluster in Figure 1, findings indicated significant differences between outcome groups, *F* (3, 607) = 11.63. The sheltered group was highest followed by the unsuccessful group, followed in turn by the competitive and homemaker groups which did not differ significantly. A point of note here is that competitive and homemaker closure clients present similarly and low on this factor.

Social Security receipt. Significant differences were shown between outcome groups, *F* (3, 607) = 4.89, *p* = .0023. The unsuccessful closure group was highest and significantly different from the other outcome groups which did not differ on this factor. While caution should be exercised in attempting to relate even a single

client dimension to outcome, clients high on this factor may experience financial disincentives toward successful completion of the rehabilitation process.

Family size. This client dimension did not show any significant differences between outcome groups, $p = .17$. This finding is not to be considered as indicating that family size and associated client characteristics could not interact with rehabilitation services and/or environmental factors to influence rehabilitation outcomes. This client dimension should be retained and further investigated.

Severity of disability. The last client dimension also showed significant differences between outcome groups, F (3, 607) = 7.05, $p = .0001$. The competitive outcome group was significantly lower on this dimension than the other groups which did not differ. While it is not surprising that the competitive group is lowest, it is provocative that there were no differences between the other groups on this index of extent of disability.

Client Dimension Profiles for Outcome Groups When viewed from a profiling perspective, these data provide important information concerning rehabilitation outcome groups. Figure 2 shows the profile of client dimensions across competitive and sheltered rehabilitation outcome groups. Figure 3 shows the profiles of client dimensions across homemaker and unsuccessful rehabilitation outcome groups. These figures enable the

rehabilitation outcome groups to be described and contrasted by the dimensions. It may be noted that for
each of the profiles displayed, the standard errors of the means for the competitive, homemaker, and unsuccessful outcome groups ranged from .6 to .8, approximately. For the sheltered group, due to its smaller size, the same statistic had about twice the previous range. These benchmarks may be useful in interpreting meaningful differences among the factors within each outcome group. Also, each of the following profiles can be considered as a general and normative pattern of characteristics presented by clients as they enter the rehabilitation system and can be suggestive of directions for service to clients.

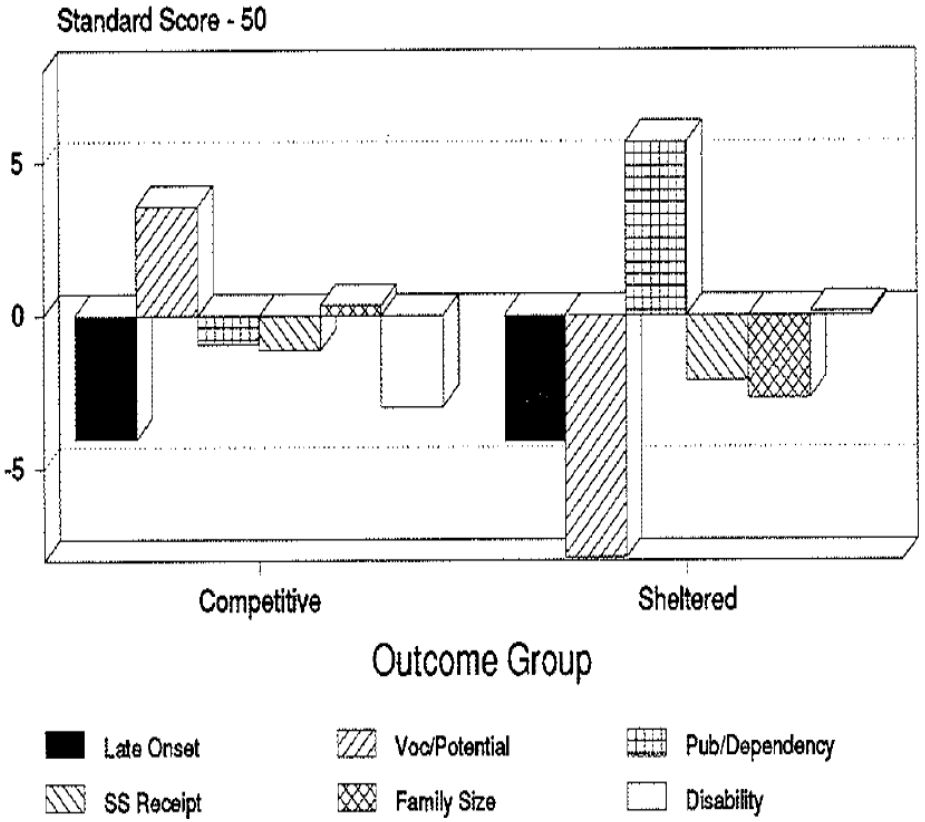
Competitive group client profile. Examination of the competitive outcome group suggests a client characteristic profile *at referral* which is considerably below average for late onset of blindness. This suggests that clients in this closure group tend to have an earlier onset of blindness and have other characteristics inversely associated with the *late onset of blindness* factor, such as earlier age at referral, higher skill level of occupational goal, etc. This group was also high for the vocational potential factor, as should be expected.

The next three dimensions, public dependency, Social Security receipt and family size were average or slightly below average, indicating that the competitive group was not outstanding on these characteristics. Also, as might be expected, this group was below average in severity of disability.

Recommendations

This profile suggests a target for identification and a direction for service delivery for clients seeking competitive employment. Of course, some characteristics cannot be changed, such as when the onset of blindness occurs, but appropriate rehabilitation services and training can be prescribed which could reduce or overcome the effects of "negative" client characteristics such as those involving severity of disability.

Figure 2. *Client Profiles: Competitive and Sheltered Groups.*



Recommendations

Sheltered group client profile. The sheltered group was low on late onset, very low on vocational potential, quite high on public dependency, tending lower on Social Security receipt, tending lower on family size, and average on severity of disability. Assuming it is appropriate and desirable to enhance this outcome in the direction of competitive employment, more appropriate training is indicated to overcome the low level indicated on vocational potential. Attention to the high level of public dependency is certainly suggested. Determinations need to be made as to the strength of this factor as a disincentive to competitive employment. The trend toward larger family size suggests an opportunity to increase involvement of other family members in the rehabilitation process. Attention to restoration services and follow-up training also appears warranted to help mitigate the effects of disabilities.

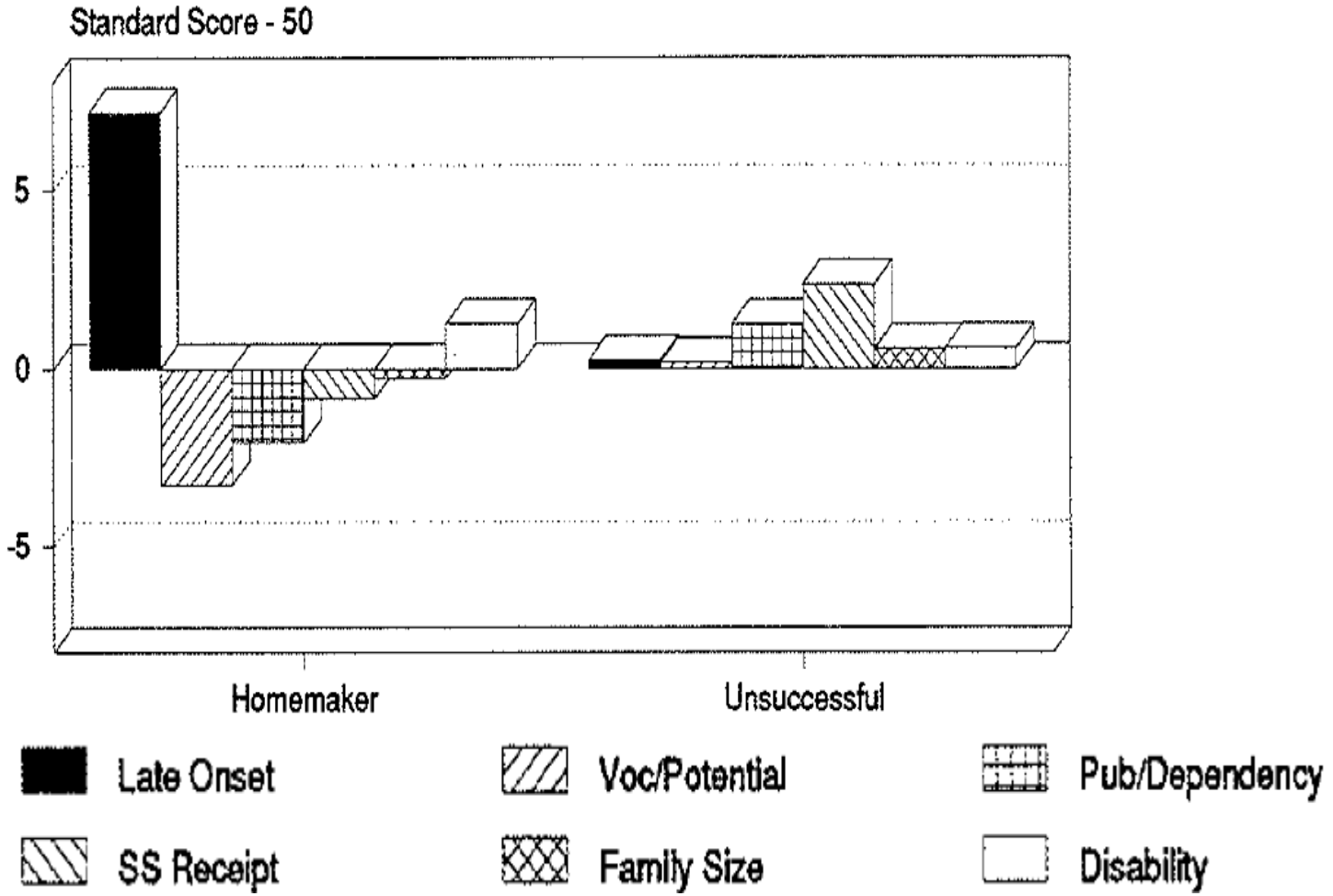
Homemaker group client profile. The referral characteristics of clients closed as homemakers suggested late onset of blindness characteristics to a very high level, somewhat below average vocational potential and public dependency, average Social Security receipt, average family size, and disability severity slightly above average. The areas of attention for this profile are the late onset dimension and its related characteristics, vocational potential, and severity of disability. While late onset of blindness cannot be changed, the area of services related to education and training to raise vocational potential is clearly one for

careful attention. Untapped vocational potential exists among these clients. Also, as with the sheltered group profile, attention to restoration services and follow-up training appears critical to help mitigate the effects of disabilities.

Unsuccessful closure client profile. The referral characteristics of clients closed unsuccessfully are impressive mostly for what they are not. All dimen-sions, except perhaps slightly elevated receipt of Social Security, are about average. A re-occurring theme shown here seems to be that unsuccessfully closed clients are not much different from competitively closed ones (Giesen & Ford, 1986b). It is tempting to speculate that with greater attention to the remission of disabil- ities, attention to possible disincentives from receiving Social Security, and appropriate education or vocational training to increase the vocational potential dimension, many unsuccessful closures could become competitive ones.

The preceding profiling of the outcome groups shows that outcome groups have different signatures with respect to client characteristics dimensions. It further shows the utility of systematically summarizing client characteristics along dimensional lines.

Figure 3. *Client Profiles: Homemaker and Unsuccessful Groups.*



SUMMARY

1. A "macro" systems approach, using multivariate methods, can be applied to the state-federal vocational rehabilitation system serving blind and visually impaired clients.

2. A focus on a wide variety of client characteristics can lead to a summarizing of this information into six salient dimensions of client characteristics. These dimensions are:

A. *Late onset of blindness*,
B. *Vocational potential*,
C. *Public assistance dependency*,
D. *Social Security receipt*,
E. *Family size*, and
F. *Severity of disability*.

3. The usefulness of these key client characteristic dimensions is illustrated by the following: (a) the important information associated with client characteristics is more easily comprehended when viewed as six dimensions than when viewed as a large number (48 in this study) of specific pieces of data, (b) counselors may use the six dimension areas as key information areas to obtain from clients for record keeping and for planning case services, (c) administrators and managers may use the six dimension areas to help decide what information to retain in their management information systems. The six client

characteristic dimensions synthesize the useful information in a much larger number of variables which no longer need to be maintained.

4. The five established client characteristic dimensions relate to client outcome. While obviously not the only factor influencing outcome, patterns of client characteristics are important for service provision and outcomes.

Counselors and administrators can use these profiles, either individually or for client groups, to plan case services delivery. By obtaining answers to 18 to 24 (or possibly fewer) questions, the counselor can obtain virtually all of the information needed for case planning and for the agency management information system. Table 3 in the Appendix shows the necessary questions and establishes a format for calculating the dimension scores on an individual client basis and gives an example of application to an individual case. Once such dimensions scores are calculated for a client, the scores can easily be plotted and a profile developed, similar to those in Figures 2 and 3. By comparing the profile calculated for the client with the profiles available on the outcome groups, discrepancies could easily be identified and more appropriate services planned.

Perhaps the ideal and most technologically current way to obtain the individual client profiles is by appropriate computer programming of the information and computations from Table 3 and subsequent plotting. The program could be written in a popular database management

or spread sheet "language." Input information would include the data requested in Table 3. The program would compute the total scores on each of the six dimensions and generate a profile graph for the individual client. Development of such software would not be overly difficult.

5. The systems approach of establishing dimensions within domains of the vocational rehabilitation system appears to be a useful approach and should be extended. Identification of key dimensions in the domain of *delivery of rehabilitation services* should be a fruitful direction for future research. The same holds true for the domain of the *environment* in which the rehabili- tation system exists. A dimensional analysis in these domains of activity could be used diagnostically and programmatically to predict and enhance outcomes. Once dimensions are established in these domains of functioning, additional research could investigate *patterns* of service delivery and identify *clusters of clients* receiving similar sets of services. Such information would be useful to efficiently plan for delivery of needed services and to facilitate implementation of improved rehabilitation strategies. With an organizational systems approach, and as dimensions of activity are established, it is expected that other useful insights into rehabilitation dynamics and system interrelations will emerge.

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APPENDIX

Table 3

Brief Computation of Service Dimension Indices

I. Late Onset of Blindness

C2	Age at Onset of Blindness	(_____ x .10453) - (3.0172) = _____
R7	Age at Referral	(_____ x .122) - (5.2036) = _____
C16	Years in Previous Occupation	(_____ x .0894) - (1.2239) = _____
C15	Months from Previous Occupation at Referral	(_____ x .01014) - (.2693) = _____

Onset of Blindness Dimension Total = _____

II. Vocational Potential

R26	Highest Grade Completed	(_____ x .6245) - (6.555) = _____
R28	Weekly Earnings at Referral	(_____ x .0232) - (.566) = _____
R33D	Primary Support at Referral = Other Sources	(_____ x 4.848) - (.744) = _____

Vocational Potential Dimension Total = _____

Table 3 (continued)

III. Public Assistant Dependency

R32 Time on Pub. Assist. at Referral
(_____ x 1.0099) - (.919) = _____

R31 Pub. Assist. Month Amt. at Referral
(_____ x .0215) - (1.1523) = _____

R33C Prim. Support at Referral = Transfer Pay
(_____ x 4.5419) - (2.1244) = _____

R12A SSI at Referral
(_____ x 4.8763) - (1.0582) = _____

Public Assist. Depend. Dimension Total = _____

IV. Social Security Recipient

R6D Referred by Welfare & Other
(_____ x .373) - (.0861) = _____

R37A Social Security Recipient at Referral
(_____ x .946) - (.17824) = _____

R11A SSDI Received at Referral
(_____ x 1.00113) - (.269303) = _____

R36A Referred by Social Security Administration
(_____ x 1.0354) - (.11709) = _____

Social Security Recipient Dimension Total = _____

Table 3 (continued)

V. Family size

R23A	Currently Married	(_____ x .0534) - (.021) = _____
R24	Number of Dependents	(_____ x .55201) - (3.969) = _____
R25	Total Number in Family	(_____ x .41141) - (1.10011) = _____
R29	Total Monthly Family Income at Referral	(_____ x -.022) - (-.11013) = _____
	Family Size Dimension Total	= _____

VI. Severity of Disability

TOTDIS	Total Number of Disabilities	(_____ x 3.6483) - (10.3174) = _____
NEDIS	Number of Eye Disabilities	(_____ x 4.3185) - (7.5444) = _____
NDIS	Number of Additional Disabilities	(_____ x 3.0252) - (3.2715) = _____
HEAIMP	Hearing Impaired Severity Code	(_____ x 2.91015) - (.3597) = _____
	Severity of Disability Dimension Total	= _____

Sample Case of John Doe

Data related to Late Onset of Blindness. John had onset of blindness at 30 years of age. He was referred for services at age 33, had eight years of work experience, and was unemployed for 12 months before referral.

Data related to Vocational Potential. John has a high school degree (completed the 12th grade), earned $120 per week from a part-time job when referred, and received no other support (personal or private sources) at the time of referral.

Data related to Public Assistance Dependency. John had been on public assistance between six months and one year (category 2) at referral, received $400 per month in public assistance (primary source of support at referral), and did not receive SSI at referral.

Data related to Family Size. John is currently married, has a total of four family members including himself, with a total monthly family income at referral of over $600 (category 9).

Data related to Social Security Receipt. John was referred by Welfare or a similar social service agency, was not a Social Security recipient at referral, received SSDI at referral, and was not referred by the Social Security Administration.

Data related to Severity of Disability. John has a total of three disabilities (two are eye-related, one is not related to vision), and has no hearing impairment.

John's chart for computation of client dimension indices follows, and his scores on the client dimension indices are graphed in Figure 4.

Table 3a.
Brief Computation of Service Dimension Indices

I.	**Late Onset of Blindness**	
C2	Age at Onset of Blindness = 30 years (30 x .10453) - (3.0172) =	0.119
R7	Age at Referral = 33 years (33 x .122) - (5.2036) =	-1.18
C16	Years in Previous Occupation = 8 years (8 x .0894) - (1.2239) =	-.509
C15	Months from Previous Occupation to Referral = 12 months (12 x .01014) - (.2693) =	-.148
	Onset of Blindness Dimension Total =	-1.715
II.	**Vocational Potential**	
R26	Highest Grade Completed = 12th Grade (12 x .6245) - (6.555) =	.939
R28	Weekly Earnings at Referral = $120.00 (120 x .0232) - (.566) =	2.218
R33D	Primary Support at Referral = Other Sources = "NO" = 0 (0 x 4.848) - (.744) =	-.744
	Vocational Potential Dimension Total =	2.413

Table 3a (continued)

III. Public Assistance Dependency

R32 Time on Public Assistance at Referral = 2 = "6 Months to 1 Year"
(2 x 1.0099) - (.919) = 1.101

R31 Pub. Assist. Month Amount at Referral = $400.00
(400 x .0215) - (1.1523) = 7.448

R33C Primary Support at Referral = Transfer Payments = "YES" = 1
(1 x 4.5419) - (2.1244) = 2.425

R12A SSI at Referral = "NO" = 0
(0 x 4.8763) - (1.0582) = -1.058

Public Assist. Depend. Dimension Total = 9.915

IV. Social Security Recipient

R6D Referred by Welfare & Other = "YES" = 1
(1 x .373) - (.0861) = 0.287

R37A Social Security Recipient at Referral = "NO" = 0
(0 x .946) - (.17824) = -0.178

R11A SSDI Received at Referral = "YES" = 1
(1 x .269303) - (.11709) = 0.732

R36A Referred by Soc. Sec. Administration = "NO" = 0
(0 x 1.0354) - (.11709) = -0.117

Social Security Recipient Dimension Total = 0.723

Table 3a (continued)

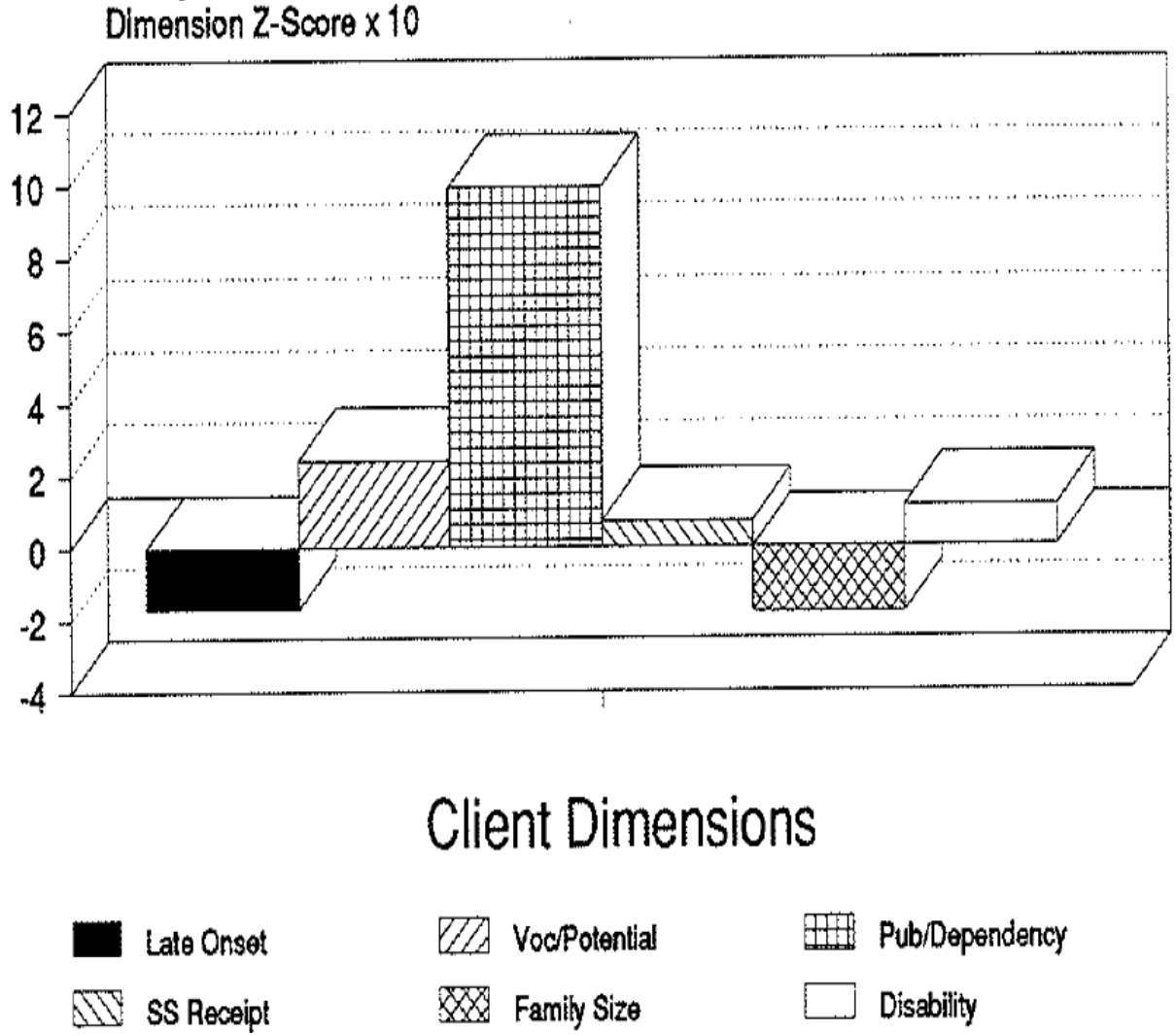
V. Family Size

R23A	Currently Married = "YES" = 1	
	(1 x .0534) - (.021) =	0.0324
R24	Number of Dependents = 3	
	(3 x .55201) - (3.969) =	-2.313
R25	Total Number in Family = 4	
	(4 x .41141) - (1.1-0011) =	0.546
R29	Total Monthly Family Income at Referral = "600 or Above" = 9	
	(9 x -.022) - (-.11013) =	-0.0879
	Family Size Dimension Total =	-1.823

VI. Severity of Disability

TOTDIS	Total Number of Disabilities = 3	
	(3 x 3.6483) - (10.3174) =	0.628
NEDIS	Number of Eye Disabilities = 2	
	(2 x 4.3185) - (7.5444) =	1.093
NDIS	Number of Additional Disabilities = 1	
	(1 x 3.0252) - (3.2715) =	-0.246
HEAIMP	Hearing Impaired Severity code = "NO LOSS" = 0	
	(0 x 2.91015) - (.3597) =	-0.360
	Severity of Disability Dimension Total =	1.114

Figure 4. *Client Profile: Case of John Doe.*



Sample Case of John Doe (continued)

The dimension profile of John indicates slightly below average status on late onset and family size; slightly above average on Social Security Receipt and severe disability; above average on vocational potential; and much above average for public assistance dependency. The profile is an encouraging one because below average status on late onset is associated with wage-earning successful closures. The elevation on the vocational potential factor is also positive and similar to the general competitive client profile. The level of severe disability is indicated as an areas of definite concern. The level on this dimension is comparable to the general homemaker and unsuccessful profiles. Careful attention should be given to feasible restoration, assistive devices, and similar services to overcome the level of severe disability indicated.

Finally, the profile indicates a strong problem area of dependency on public assistance, particularly with family dependents. The rehabilitation counselor would need to recognize that this dependency may be the greatest barrier to competitive outcome and to focus efforts accordingly, else an unsuccessful closure may occur.

The above example is intended to illustrate the process of profiling an individual case and how the profile can be examined in relation to the general outcome group profiles to illustrate areas of client potential and need for services to facilitate case service planning to avoid unsuccessful closure and maximize successful outcomes.