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Employment Outcomes among Individuals with Visual Impairments: The Role of Client Satisfaction and Acceptance of Vision Loss

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Abstract *-- This study examined the relationship of client satisfaction with the vocational rehabilitation (VR) process and acceptance of vision loss with respect to employment outcomes among former VR clients with visual impairments. Participants were 128 clients of the Michigan Commission for the Blind (MCB) whose cases were closed between fiscal years 2003 and 2004. The results of a logistic regression analysis indicated that participants who reported higher levels of client satisfaction and who focused on their remaining assets (e.g., functions, abilities) after vision loss were more likely to be employed at the time of case closure than their counterparts who did not. Implications for rehabilitation practice and suggestions for future research are provided.*
Keywords: visual impairment, customer satisfaction, acceptance of vision loss, employment outcome, vocational rehabilitation

Inclusion of people with disabilities in the world of work is crucial for their full social integration and financial independence (Houtenville, 2003). Gainful employment contributes to the well being of people with disabilities in both tangible and intangible ways; it enables them to have the ability to live independently, enjoy self-determination, make choices, contribute to society, and pursue meaningful careers. The importance of employment in the improvement of the lives of people with disabilities is reflected in the state-federal vocational rehabilitation (VR) system mission, which is to empower people with disabilities to obtain and maintain meaningful employment and economic self-sufficiency (Kosciulek, Vessell, Rosenthal, Accardo, & Merz, 1997).

Despite the passage of disability-related legislation (e.g., the Randolph-Sheppard Act, the Americans with Disabilities Act, and subsequent Rehabilitation Act amendments), people with visual impairments continue to be disproportionately underrepresented in the competitive labor market (Crudden, 1999; Crudden, McBroom, Skinner, & Moore, 1998). For instance, Disability Supplement data from the National Health Interview Survey (Kirchner, Schmeidler, & Todorov, 1999) revealed that only 46% of working-age adults aged 18 to 69 years with visual impairments (i.e., difficulty seeing words and letters in ordinary print, even with glasses on) are working. This figure decreases to 32% among people who are legally blind. These proportions are markedly lower than the estimated 80% of people without disabilities in the same age group who are employed (Kirchner et al., 1999).

Multiple explanations for the high unemployment and underemployment rates among people with visual impairments appear in the rehabilitation literature. Some explanations have attributed this phenomenon to individuals inadequacies, such as lack of education and vocational training, limitations due to visual impairment, deficient marketable skills, and personal discouragement (Hanye, 1998; Salomone & Paige, 1984). Others have highlighted societal issues and personal beliefs, including labor-force trends, architectural barriers, negative public attitudes, inaccessible transportation systems, and discrimination in hiring (Crudden, 1999; O'Day, 1999; Wolffe, Roessler, & Schriner, 1992). Despite the contributions of these studies, the amount of data related to the employment outcomes of individuals with visual impairments is limited (Crews & Long, 1997; Giesen & Graves, 1987). Thus, in response to the continually high unemployment and underemployment rates among individuals with visual impairments or blind-

ness, it is imperative for rehabilitation researchers to scrutinize possible influences on employment outcomes in broader, multi-faceted contexts such as client satisfaction and acceptance of vision loss.

Client Satisfaction

The rise of advocacy for client involvement in service planning and the increased demand that funding agencies be held accountable for rehabilitation outcomes have led to the requirement that VR programs and services yield high levels of client satisfaction (Koch & Merz, 1995; Kosciulek, 2003). Rehabilitation service providers are under immense pressure to find and utilize tools that are able to effectively assess client satisfaction in order to meet legislative initiatives, respond to the growing empowerment of client groups that demand informed choices, and adapt to changes in current service intervention strategies (Richard, 2000). Kosciulek (1999) suggested that increased control of, and choice in, disability policy formulation and rehabilitation service delivery by individuals with disabilities would have a positive effect on community integration, empowerment, and quality of life. These benefits, in turn, would result in increased satisfaction. Indeed, a high level of client satisfaction is one of the key features of a high-quality rehabilitation system, thus a thorough program evaluation should include not only quantitative measures (such as the rate of successful case closures), but also client feedback and opinions about services in order to gain an accurate understanding of the performance of VR programs. In the *Consumer Satisfaction Sub-committee Report*, the Council of State Administrators of Vocational Rehabilitation (CSAVR, 1998) concluded that client satisfaction data are critical to improving services for clients, planning programs, evaluating counselors and providing feedback, evaluating program performance, and identifying staff training needs.

Acceptance of Vision Loss

Acceptance of disability is an important variable to consider when assessing employment outcomes (Groomes & Linkowski, 2007). Researchers have argued that the degree to which an individual accepts his or her vision loss is a critical factor that needs to be examined when attempting to understand rehabilitation outcomes among people with visual impairments (Dodds, Bailey, Pearson, & Yates, 1991; Dodds, Flamingan, & Ng, 1993; Livneh, 2001). Kendall and Buys (1998) argued that psychosocial adjustment issues represent one of the most significant influences on rehabilitation outcomes. Moreover, in a study that sought to develop a scale of adjustment for people with blindness or visual impairments, Dodds et al. (1991) reported that following the loss of sight, individuals usually experience a period of psychological adjustment necessary to prepare mentally for the tasks ahead. During this period, the acceptance of one loss of sight is a major determinant that influences the adjustment process s well as its outcome (Dodds et al., 1991). In a subsequent study that aimed to validate a scale of adjustment for people with blindness or visual impairment, Dodds and colleagues (1993) found that a person with a high level of acceptance of his or her vision loss demonstrates the following: (a) low levels of anxiety, (b) an absence of depression, (c) high self-esteem, (d) a high sense of self-efficacy, (e) a high sense of responsibility for recovery, and (f) a positive attitude towards individuals with visual impairment or blindness.

The purpose of this study was to examine the relationship between client satisfaction with the VR process, acceptance of vision loss, and employment outcomes among individuals with visual impairments.

Method

Participants

The participants in the study were former Michigan Commission for the Blind (MCB) clients whose cases had been either successfully or unsuccessfully closed between fiscal years 2003 and 2004. Successful VR outcomes included clients who became (a) competitively employed for at least 90 days, (b) self-employed, or (c) business enterprise program (BEP) operators (Rehabilitation Services Administration, 2003). Failures to obtain gainful employment after receiving VR services were classified as unsuccessful outcomes. In light of the purpose of this study, homemakers (n = 284) were excluded from the 952 MCB cases that were terminated during the aforementioned period of time. Deceased clients (n =24), transferred clients (n =16), and those who were older than 64 years of age (n = 98) were also excluded. Consequently, 560 former clients were identified as meeting the selection criteria.

Using the records available from the MCB database, 560 survey packets were mailed to the identified prospective participants; however, 70 survey packets were undeliverable due to incorrect mailing addresses. Of the surveys delivered to former clients, 149 were completed and returned; 21 incomplete questionnaires were discarded, yielding a total of 128 usable surveys. The response rate of 30.5% (149 out of 490) exceeded the typical 10 to 15% mail survey response rates (Dillman, 2000).

The sample consisted of 60 males and 68 females. The majority (75.8%) of respondents was European American, and 24.2% reported being African American. The participants ages ranged from 18 to 63 years (M = 41.8, SD = 5.9). Almost 70% of the VR clients had successful employment outcomes, and just over 30% had unsuccessful employment outcomes. Of those clients whose cases were successfully closed, 84.2% worked in competitive employment settings, 12.4% were self-employed, and 3.4% obtained positions through the state-supported BEP as operators of vending machines and food services in public facilities. About 21.9% of the participants did not finish high school, 42.2% were high school graduates, and 35.9% possessed at least an associate or bachelor degree.

Instrumentation

Client satisfaction. Client satisfaction was measured using the Customer Satisfaction Survey (CSS), an instrument developed by Missouri Rehabilitation Services for the Blind (Kosciulek et al., 1997). The CSS is a 14-item instrument using a four-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The instrument assesses four components of client satisfaction: (a) client participation, choice, and involvement in the VR process (e.g., "I had the final say in the selection of service providers"; (b) the client's relationship with the counselor and the timeliness of services (e.g., "I received services from MCB without excessive waiting"; (c) client satisfaction with the employment-related services rendered (e.g., "The services MCB provided were adequate to help me secure employment"); and (d) the overall agency and VR process (e.g., "I am pleased with the overall outcomes of my experience in the VR program provided by MCB"). Possible scores for the scale ranged from 14 to 56 points, with higher scores indicating greater levels of client satisfaction. The CSS has been reported to have an internal consistency reliability of .94 (Kosciulek, 2003).

Acceptance of vision loss. Acceptance of vision loss was measured using the Acceptance of Disability Scale-Revised (ADS-R; Groomes & Linkowski, 2007). The ADS-R is a 32-item instrument that uses a 4-point Likert-type scale ranging from 1 (*strongly disagree)* to 4 (*strongly agree*) to measure personal adjustment to a disability. Possible scores for the ADS-R range from 32 to 128 points. Higher scores indicate greater acceptance of disability. The ADS-R has been reported to have an internal consistency reliability of .93 (Groomes & Linkowski, 2007).

The ADS-R is a self-report questionnaire derived from Wright (1983) theory of value changes. A tenet of this theory is that the readiness of individuals to accept their own disabilities can be predicated based on the occurrence of four value changes, each of which constitutes a subscale on the questionnaire: (a) enlargement of scope of values, (b) subordination of physique relative to other values, (c) containment of disability effects, and (d) transformation of comparative-status values to asset values. The first subscale, E (enlargement of scope of values), has nine items and examines one degree of satisfaction with remaining values and one reckoning with what has been lost (e.g., "My vision impairment will not prevent me from making good in life"). The second subscale, S (subordination of physique relative to other values), has five items and examines the extent to which an individual stresses physical ability and appearance in accordance with his or her disability (e.g., "Good physical appearance and physical ability are the most important things in life"). The third subscale, C (containment of disability effects), has nine items and examines whether an individual spreads his or her disability beyond his or her actual impairment to other aspects of life (e.g., "It makes me feel very bad to see all the things that people without vision impairment can do that I cannot"). The fourth subscale, T (transformation of comparative-status values to asset values), has nine items and examines whether an individual emphasizes his or her own assets and abilities, rather than limitations (e.g., "Because of vision loss, I have little to offer other people").

Table 1

Descriptive Statistics and Coefficients for the Subscales of the ADS-R

Variable	*M*	*SD*	Range	α
C-Subscale	26.65	5.39	9-35	.89
E-Subscale	28.78	4.59	17-36	.84
T-Subscale	28.56	5.14	12-36	.85
S-Subscale	15.00	2.96	5-20	.72

An individual score for each subscale reflects his or her level of acceptance of disability with respect to a specific set of value changes. Table 1 displays the means, standard deviations, and Cronbach alpha coefficients for the four subscales from the data used in the current study.

Procedure

In an effort to increase the survey response rate, three mailing attempts were made over a 13-week period (Dillman, 2000). Initially, a packet of materials containing a cover letter, a consent form, the CSS, the ADS-R, the demographic sheet, and a self-addressed reply envelope for the return of completed materials was mailed to potential participants. The cover letter explained (a) the importance of the study to current and future VR clients with visual impairments, (b) the participants' right to withdraw from the study, and (c) an assurance of confidentiality and anonymity. The survey packet was also made available in alternative formats such as Braille, large print, and floppy diskette. Two weeks after the first mailing, a reminder postcard was sent to all participants encouraging them to take part in the study. In a final attempt to garner as many participants as possible, the first author mailed a duplicate set of survey packets to the participants who had not yet returned their responses ten weeks after the postcard mailing.

Results

Binary logistic regression analysis was conducted to examine the relationship of client satisfaction with the VR process and acceptance of vision loss with respect to employment outcomes. Binary logistic regression analysis is an appropriate statistical method for computing the probability of the occurrence of an event when the dependent variable is dichotomous (Pample, 1999). Therefore, binary logistic regression was utilized to forecast the likelihood of a successful (or an unsuccessful) employment outcome for a VR client with a visual impairment. Client satisfaction and acceptance of vision loss were used as the predictors (Hosmer & Lemeshow, 2000).

In order to yield statistically significant predictor variables (and, in turn, to generate the most parsimonious model achievable), the following steps were taken. First, the total scores for client satisfaction and the four subscales of the ADS-R were included in the model, using the forward stepwise method of binary logistic regression analysis. The analysis yielded two statistically significant predictor variables (i.e., client satisfaction and the transformation of comparative-status values to asset values). Next, a logistic regression analysis using the enter method was conducted employing the two aforementioned variables.

The results of the model are presented in Table 2 and reveal that the two predictors (client satisfaction with the VR process and transformation of comparative-status values to asset values) were able to distinguish between successful and unsuccessful employment outcomes [-2 Log likelihood = 137.365; $X^2(1) = 20.02, p = .000$]. The model's goodness-of-fit ($X^2 = 9.87$, $p = .247$) was not statistically significant, indicating that the frequency predicted by the model did not significantly differ from the observed frequency (Hosmer & Lemeshow, 2000). The condition of collinearity between the two predictor variables had no effect on the outcome as evidenced by the low correlation of $r = -.001$.

Table 2

Logistic Regression Results for Predicting Employment Outcomes

Predictor	β	*SE*	Wald's χ^2	*df*	*p*	Odds Ratio
Client Satisfaction	0.059	.025	5.403	1	.020	1.06
T-Subscale	0.136	.041	10.933	1	.001	1.15
Constant	5.180	1.662	9.708	1	.002	

Results of a Wald test also revealed that client satisfaction ($Z = 5.40, p = .02$) and transformation of comparative-status values to asset values ($Z = 10.93$, $p = .001$) reliably predicted employment outcomes among former MCB clients with visual impairments. The Cox and Snell $R^2 = .145$ and Nagelkerke $R^2 = .205$ statistics, which are analogous to the R and R^2 of multiple regression analysis, indicated that approximately 15 to 21% of the variance in employment outcomes was explained by these two predictor variables.

The final model was able to classify 74.2% of the cases. In other words, given a participant responses to questions about client satisfaction and transformation of comparative-status values to asset values, the model correctly predicted MCB client employment outcome status in 74.2% of the cases. The odds ratios were calculated to obtain the estimated coefficients for predicting employment outcomes. The odds ratios for client satisfaction and the transformation of comparative-status values to asset values in this model were 1.06 and 1.15, respectively. This means that an individual would be 1.06 times more likely to be employed with each one-unit increase in the CSS score. Similarly, an individual would be 1.15 times more likely to achieve a successful employment outcome with each one-unit increase in the score of transformation of comparative-status values to asset values.

Discussion

In the present study, an individual who reported a high level of client satisfaction was more likely to be employed at the time that his or her case was closed at the MCB. Likewise, an individual who reported a low level of client satisfaction was less likely to be employed at the time of case closure. The results provide support for previous research on the correlation between positive employment outcomes and high degrees of client satisfaction (Capella & Andrew, 2004; Kosciulek et al., 1997; Schwab, Smith, & DiNitto, 1993). In particular, the results indicate a disparity between the two groups in terms of their perceptions of their employment readiness after completing the VR program. That is, only 41% of the participants in the category of unsuccessful employment outcomes believed that they were adequately prepared to seek employment at the time of case closure. On the contrary, 67.4% of participants in the category of successful employment outcomes felt that they were ready to seek employment after exiting the VR program.

The evidence gained from the current study also confirms that participants who reported experiencing a substantial transformation from comparative-status values to asset values (i.e., those had come to focus on their abilities rather than their limitations) were more likely to be employed than those who did not report such a transformation. For instance, VR clients with gainful employment at the time of case closure tended to reject the notion that visual impairment was the worst possible thing that could happen to a person. This finding suggests that accepting one disability is an important factor that influences the adjustment process. In other words, people who focus on and utilize their remaining resources to a maximum degree will be able to accept their vision loss better, which, in turn, will have positive effects on their employment outcomes (Dodds et al., 1991; 1993).

Limitations of the Study

Three limitations of the current study must be noted. First, racial representation in the MCB sample included only European Americans and African Americans. Therefore, generalizability of the results could be problematic when applying them to VR clients with visual impairments from other ethnic backgrounds. Second, despite a moderately high response rate of 30.5%, the number of participants in this study did not meet the sample size of 150 required by the *a priori* power analysis (Cohen, 1988). The third limitation was that it was not feasible to account for

the length of time participants had experienced blindness or visual impairment. The length of time that participants had lived with their disability may have influenced both acceptance of the disability and satisfaction with the VR services they received.

Implications for VR Practice

This study has several important implications for rehabilitation counselors who work with VR clients who have visual impairments. One of the current study findings indicates that employment outcomes can be predicted by level of client satisfaction. This finding supports a need for the development and implementation of a rehabilitation service model that (a) promotes active client participation in the VR process, (b) improves client-counselor relationships, and (c) enhances the quality of services necessary for obtaining successful employment outcomes (Harkins & Moyer, 1997). Because clients with unsuccessful employment outcomes tended to express significantly higher levels of discontent in all areas of client satisfaction, a follow-up investigation of clients who were not employed at the time of their case closure is recommended in order to understand and respond to the factors related to their dissatisfaction. Dissemination of the findings regarding client satisfaction to MCB staff would help VR personnel to understand clients perceptions of the agency performance.

Another important finding is that the extent to which individuals with visual impairments focus on their strengths influences their employment outcomes. This finding supports the notion that early intervention after the onset of vision loss is necessary in order to prevent anxiety, depression, loss of self-esteem, and low expectations that the situation will change for the better (Dodds et al., 1993). Rehabilitation practitioners working with this population, therefore, are encouraged to concentrate on their clients remaining assets and strengths in order to increase their clients probability of attaining positive employment outcomes. For example, if a VR service client has good communication and writing skills prior to the loss of his or her vision, a job such as an editor, speech writer, or grammar tutor should be considered, as the required skills are readily transferrable.

Suggestions for Future Research

This study results suggest numerous possible directions for further research. This study found that a high level of client satisfaction with the VR process, as well as an individual ability to focus on his or her remaining abilities and strengths, contributed to positive employment outcomes among former MCB clients. However, more research is desirable in order to further investigate the impact of both client satisfaction and level of acceptance of vision loss on employment outcomes. For example, considering that participants who were not employed at the time of their case closure had a much lower participation rate (15.2%) in this study than those who were employed (29.4%), a follow-up study involving individuals from the unsuccessful employment outcome category would provide researchers and rehabilitation practitioners with much-needed information to understand and respond to factors related to their dissatisfaction. This knowledge, in turn, may help VR clients, in general, to reach more successful employment outcomes in the future.

Although they were found to be statistically nonsignificant in the present study, it is highly recommended that future research further examine the relationships of the three remaining subscales of the ADS-R (i.e., enlarging scope of values, containment of disability effects, and subordination of physique) and employment outcomes among individuals with visual impairments. Because the subscales demonstrating a satisfaction with remaining values and emphasizing one own assets and strengths are closely related (Groomes & Linkowski, 2007), it was surprising to find that the enlarging scope of values subscale was not a significant predictor of employment outcomes. In addition, research investigating the impact of VR programs on the level of acceptance of vision loss will expand the understanding of how VR experiences contribute to an individual level of vision loss acceptance and its relationship to employment outcomes. Also, considering that a substantially larger number of clients with visual impairments have their cases closed as homemakers than those in any other disability group (Warren, Giesen, & Cavenaugh, 2004), researchers are encouraged to investigate whether there is a difference in client satisfaction and acceptance of vision loss among individuals whose cases are closed as homemakers, individuals whose cases are closed as competitively employed, and individuals whose cases are not successfully closed.

Finally, it is important to note that people with adventitious blindness may have more difficulty adjusting to their vision loss, as compared to their counterparts who experience blindness at birth (Smart, 2008). The reasons for this may be that congenital disabilities elicit less prejudice and stigma by society than acquired disabilities, and/or that those who become blind at an early age have no memory of not having a disability. However, a further investigation of whether or not the acceptance of vision loss is affected by the time of its onset is necessary, since a majority of research investigating the acceptance of vision loss has gathered data during a single point in time (Smart, 2008).

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