Barriers to Employment
Among Persons who are Blind or Visually Impaired:

Executive Summary

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Introduction

Persons with severe visual impairments continue to be substantially underrepresented in the competitive labor force despite persistent efforts by the Rehabilitation Services Administration (RSA), policy makers, service providers, and consumers. The stagnant growth of this sector of the labor force prompted the National Institute on Disability and Rehabilitation Research to establish a research priority to identify barriers to employment that can be addressed by rehabilitation service providers or employers, and to develop or identify rehabilitation techniques or reasonable accommodations that address these barriers.

This executive summary describes recently completed research at the Rehabilitation Research and Training Center on Blindness and Low Vision (RRTC) at Mississippi State University which identified barriers to employment faced by people with visual impairments. This publication is organized into two sections: (a) a brief literature review on the barriers to employment for adults with visual impairments, and (b) results from a mail survey. While this publication is designed to provide a quick overview to the research project, it is no substitution for the details contained in the larger publication written by Crudden, McBroom, Skinner, and Moore (1998). Interested readers are encouraged to obtain the full report entitled, *Comprehensive Examination of Barriers to Employment Among Persons who are Blind or Visually Impaired.*

Literature Review

Rehabilitation Service Provider Perspective on Barriers

Moore and Wolffe (1997) summarized a list of barriers that rehabilitation professionals and researchers considered significant contributors to the underrepresentation of persons with visual impairments in the labor force. These barriers included (a) negative attitudes of employers toward people with visual impairments; (b) lack of employment and employment-related skills; (c) lack of motivation for employment; (d) government-generated work disincentives, such as entitlement programs that provide welfare or disability benefits; (e) lack of housing and family supports; (f) lack of transportation; and (g) lack of access to information.

Dahl (1982) identified the following barriers to employment for people with severe disabilities: unrealistic attitudes and opinions of society, lack of employer knowledge about people with disabilities, and clients' low expectations.

The American Foundation for the Blind conducted a study to identify barriers that rehabilitation professionals experience when providing services to persons with visual disabilities (Link, 1975). Seven barriers to placement and employment include (a) caseloads that are too heavy and overemphasize case closures; (b) increasing numbers of consumers with multiple disabilities; (c) over-utilization of segregated employment settings; (d) personal, social, and vocational skill deficits in people with visual disabilities; (e) lack of understanding of employment options and demands; and (f) financial work disincentives.

In a discussion of the views of rehabilitation professionals employed in private agencies, Hopf (1991) stated that some rehabilitation professionals may not generate realistic vocational goals with persons pursuing college training and that college graduates who are visually impaired may not be held to the same standards as sighted peers. The perceived failure of the educational system to provide adequate training in job readiness skills and basic adaptive techniques is another barrier to competitive employment.

Arnold, Seekins, and Ravesloot (1996) indicated that socioeconomic factors, such as low population densities, high unemployment rates, low education levels, low wages, and a distinct rural culture provide barriers to successful employment for people with disabilities in rural areas.

In general, rehabilitation providers identified the following barriers to employment among persons with visual impairments: clients' lack of skills and education when applying for vocational rehabilitation services, government-sponsored work disincentives, clients' lack of access to employment and labor information, and employers' and society's negative attitudes. In addition, rehabilitation providers struggle with heavy caseloads and continue to encounter problems with providing adaptive modifications.

Consumer Perspective on Barriers

Salomone and Paige (1984) researched barriers to employment from the view of consumers with visual disabilities who were not successful in retaining competitive employment. The most common barrier identified by participants was lack of knowledge among the general public about the scope and variety of mental and physical capabilities of persons with visual impairments. Other issues included lack of successful personal and vocational experiences contributing to a positive self-concept, employer resistance to hiring persons with disabilities, transportation difficulties, and insufficient vocational training and career planning experience.

Malakpa (1994) identified the following barriers to employment for people with visual impairments and additional disabilities: inadequate transportation resources, difficulty in locating appropriate jobs, lack of long-term job coaches, inadequate funding for on-the-job assistive technology, communication difficulties with employers and coworkers, lack of vocational counselors and outreach workers, inadequate public education, limited employer cooperation, overprotection by significant others, difficulties with self-care, low self-confidence, and lack of interpersonal skills.

In another study examining consumer concerns about employment issues, members of the American Council of the

Blind were surveyed regarding their experiences with rehabilitation service delivery systems (Wolffe, Roessler, & Schriner, 1992). Respondents indicated that improvements were needed in job search strategies, education about career opportunities, and resources for purchasing assistive devices.

College graduates with visual impairments who successfully obtained employment identified the following problems during their transition from school to the workforce: (a) locating transportation; (b) accessing signs, diagrams and charts in the workplace; (c) discrimination against visual impairments; (d) difficulty accessing computers; (e) inadequate time management skills; (f) lack of opportunities for participating in recreational or athletic activities; and (g) feelings of loneliness (McBroom, 1995).

Schriner and Roessler (1991) examined 3 respondent groups (people with disabilities, people with developmental disabilities, and college students with disabilities). The most common problems were difficulty in being able to get and keep a good job, inadequate health insurance, lack of opportunities to transfer within a company due to disability, being treated unfairly as a job applicant, having less access to training and advancement, inadequate information about Social Security programs, and limited ability to affect public policy.

Lack of awareness of available resources has been cited as a barrier to gainful employment. Louis Harris and Associates conducted a nationwide telephone survey of older adults who are visually impaired for The Lighthouse (1995). More than one third of the respondents reported not knowing if services were available, and an additional 21% reported that there were no such services available in their communities. The elderly and the least educated were the most unaware of services.

In a study to examine self-perceptions of 41 working-age women with visual impairments, Corn, Muscella, Cannon, and Shepler (1985) found that these women perceived themselves as having more substantial barriers to employment than sighted women. Women with visual impairments rated the following barriers higher than sighted women in the study: (a) counselors' attitudes toward skills and lack of belief in own skills; (b) need for safety precautions; (c) employers' attitudes toward advancement; (d) education about work; (e) knowledge of legal rights; (f) limited work experience; (g) limited education; and (h) competition for traditional male positions. Both women who are visually impaired and women who are not disabled rated lower average pay as a substantial barrier to employment.

Koestler (1983) summarized the major barriers to employment facing women who are blind or visually impaired. The barriers included (a) a dependent and passive attitude fostered by overprotective parents and reinforced by education and rehabilitation professionals, (b) a timid nature and fear of failure that limits experiences, (c) a tendency to accept decisions made by others for and about themselves, (d) stereotyped views by rehabilitation professionals regarding their abilities, and (e) disincentives that make it more lucrative to remain unemployed or underemployed.

Research indicates that there is some agreement among consumers about barriers to employment. Lack of training and education was cited by most respondents, followed by attitudes held by employers and the general public. Transportation was an

issue for most, as was lack of awareness of assistive technology and awareness of any funding sources for technology. Many respondents also noted that limited previous employment experiences and job search skills present barriers to employment.

Employer Perspective on Barriers

Without the equal rights protection of ADA and Rehabilitation Act amendments, many employers ignored attempts to place qualified individuals who were blind or visually impaired (Wacker, 1976). During that time, personnel directors stated that these workers did not fit in with corporate structure, other workers did not know how to relate to workers with disabilities, and workers with disabilities could not compete with sighted workers.

Employer misconceptions even limit job opportunities for people with disabilities who obtain advanced educational degrees in the sciences (Woods, 1996). Unwarranted safety concerns limit opportunities, even though workers with disabilities have safety records that mirror their nondisabled counterparts.

In a comprehensive study on employer concerns regarding hiring people with disabilities, Greenwood and Johnson (1985) identified several key barriers. Employers recommended that referral agencies carefully screen applicants to insure that their abilities match the job requirements. Job applicants must be able to explain a disability in functional terms and to demonstrate independent functioning and good communication skills. Overall, employers reported that matching the job to a qualified applicant is the most important goal of the hiring process; however, many are unsure how to do this and routinely place workers with disabilities in lower-skilled jobs.

After hiring an individual with a disability, employers are concerned with orientation and integration of that employee (Greenwood & Johnson, 1985). Major topics addressed at this stage include orientation, skills training, accessibility, and accommodations. Employers were also concerned with employee productivity, flexibility, endurance, supervision, attendance, workforce integration, and fringe benefits. Lack of flexibility in transferring from job to job within a company was a concern, as was the impact of physical and/or mental stress on an individual with a disability. Many employers feared chronic health problems would create extra costs in health insurance, accident rates, sick leave, and absenteeism.

Beare, Severson, Lynch, and Schneider (1992) described a successful supported employment model developed by a small agency and listed several problems encountered by the staff. The major barrier was termed a "developmental thinking philosophy." This involved the employer's belief that clients must be made ready for specific jobs before they are moved into a community. Other barriers included lack of financial resources, worker dissatisfaction due to job mismatch, age-related employment difficulties, coworker dissatisfaction in the form of resentment and feelings of devaluation, difficulties in interagency collaboration, additional training demands of staff to enable the transition from segregated sites, and lack of benefits for disabled workers.

A pervasive theme in the research was the importance of job matching. The majority of employers indicated that the most important attribute for an individual to possess is up-to-date skill training or proper

education for the job. Other factors included integration or being able to communicate and get along with other employees, and productivity concerns.

Sociodemographic Issues and Barriers

Pfeiffer (1991) conducted a study of people with disabilities in Massachusetts nd uncovered several viable that relate to the employment and income levels of pwople with disabilities. Level of education was the largest influencing factor, and that, in turn, was affected by race and gender. Pfeiffer concluded that education White males have greater access than other persons with disabilities.

In a survey of 109 adult rehabilitation clients who are visually impaired, Gandy (1988) examined the impact of education on post-placement earnings in competitive employment. The author found that age, race, and education level affect salaries, with younger Whites earning more than older non-Whites. Salary level increased proportionately with education level.

Kirchner, McBroom, Nelson, and Graves (1992) studied the lifestyles of persons who are legally blind and determined that, compared to men who are legally blind or to sighted persons of either sex, women who are legally blind received less positive rewards from education in terms of income or life satisfaction. They also terminated their education at an earlier stage, and were the least likely group to pursue a college degree in a prestigious male-dominated field. Women who are legally blind are more likely to be employed in lower paying clerical fields.

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underrepresented in the labor force than men with visual impairments and attributed this discrepancy to discrimination, discouragement, and disincentives to work. The extent of their visual impairment and the attitudes that employers hold about blindness and women restrict access to competitive employment for women who are visually impaired. Dixon reported that employers are unaware of the capabilities of people who are visually impaired and of the accommodations that can be made in the workplace.

In a sample of 18,394 rehabilitated clients in 1982, Hill (1989) found that men were more likely than women to be placed in competitive employment. Three times as many women (particularly older women) as men were closed into “homemaker” status.

Wacker (1976) surveyed 96 vocational rehabilitation counselors to examine how vocational suggestions and salary predictions are influenced by clients’ gender. The author found that salary predictions for women were, on average, lower than predictions for males and that counselors tended to suggest sex-stereotypical careers for both male and female hypothetical clients. The author suggests that this attitude pervades the vocational services process and leads counselors to recommend lower paying and lower skilled jobs for women who are visually impaired.

People who are blind or visually impaired living in rural areas face unique problems in the area of rehabilitation and employment (Offner, Seekins, & Clark, 1992). They are generally less educated and less healthy than their counterparts in urban areas, are more often poor and underemployed, and lack access to appropriate health and rehabilitation resources. Specific problems noted by the authors include too few rehabilitation personnel, inadequate training and transportation resources, and too few employment opportunities.

In a review of the literature of individual characteristics affecting employment outcomes, Sanderson (1997) identified several characteristics of individuals with disabilities that hampered opportunities for competitive employment.

In a related work, 148,188 vocational rehabilitation clients whose cases were closed as rehabilitated were examined for employment outcomes (Majumder, Walls, Fullmer, & Misra, 1997). Individuals with the highest probability of competitive employment had either been employed at the time of application to vocational rehabilitation or had non-severe disabilities. Individuals with previous work histories were also likely to be competitively employed. Low probabilities for competitive employment across disability groups were closely associated with receipt of public program benefits, indicating a need for adequate employment that does not result in loss of benefits. It should be noted, however, that individuals who receive public benefits are typically more severely disabled.

According to Vander Kolk (1981), limitations in vocational interest are formed early in childhood for individuals who are blind or visually impaired and result in substantial barriers to employment. Parents and teachers tend to restrict the activity of these children. Teenagers who are blind or visually impaired rarely obtain part-time work, thus depriving them of learning basic employment skills, such as punctuality and getting along with coworkers. Lack of experience and low expectations of significant others often lead individuals to substantially limit their employability and to exhibit low levels of vocational maturity as compared to others in their age group.

Sociodemographic barriers to employment among individuals with visual impairments include level of education, gender, ethnic origin, and rural environments. Overcoming these barriers may include specific types and levels of education, training in overcoming employers' objections and preconceived notions, movement to areas supporting employment, and more global policy changes.

Adults with work disabilities living in rural areas are more likely to be unemployed than their urban counterparts. African Americans and Hispanic Americans have disability rates almost 3 times higher than Caucasians and are at greater risk of disability throughout their lifespan. It is estimated that 1 in 4 Native Americans, including Eskimo and Aleut persons, has a disability. All of these minority groups have lower employment rates among the disabled population than Caucasians with disabilities, with African Americans reporting the lowest employment rates among minority groups. This research indicates that one of the most common barriers to employment of people with disabilities is ethnic minority group membership.

Policy Issues and Barriers

Results from an employment summit sponsored by the American Foundation for the Blind were reported by Maxson, McBroom, Crudden, Johnson, and Wolffe (1997). The authors noted several factors related to the high level of unemployment of people who are blind or visually impaired,

In a 1997 report on removing barriers to work, the National Council on Disability (NCD) reviewed three major barriers to employment for people with disabilities and recommended policy reform to remove these barriers. The first barrier noted was that many people are worse off financially if they work to their full potential than if they did not work. Another major barrier is the lack of choice for individuals obtaining rehabilitation services. The Council contends that individuals could earn more and become financially independent if the aforementioned policy changes were made and if workers had access to information regarding the types of rehabilitation best suited for themselves. The final barrier NCD noted is the lack of employment opportunities. In 1996, the National Academy of Social Insurance (NASI) convened a Disability Policy Panel to discuss policy issues affecting workers with disabilities and to propose solutions to common problems in current disability policy. The Panel noted problems with access to health care, lack of short-term disability income protection, and insurance disincentives to returning to work following a disability (Mashaw & Reno, 1996). Vandergoot and Gottlieb (1994) identified similar problems and offered multiple solutions including changes to the vocational and offered potential solutions for overcoming barriers. Possible solutions for barriers that are individual in nature (such as poor self-concept), require interventions at a personal level to either overcome the barrier or change the individual's response to the barrier. Solutions to other, more global barriers, require interventions at a higher level, such as affecting change in the national economy and in transportation systems.
rehabilitation system.

During the AFB's Josephine L. Taylor Leadership Institute in 1996, participants addressed the impact of public awareness, rehabilitation and education personnel preparation, and partnerships with employers of persons who are blind or visually impaired on consumer underrepresentation in the labor force. The work group noted insufficient public education on employment capabilities of people who are blind or visually impaired and insufficient documentation on placement practices that result in quality job placements. Also reported as barriers to employment by the group were federally funded work disincentives, such as SSI; attitudes of learned helplessness fostered by professionals and significant others; and philosophical gaps between personnel in education and rehabilitation (Johnson & Walker, 1996).

Labor market opportunities, combined with financial disincentive programs contribute toward keeping individuals with disabilities from becoming successfully employed (Berkowitz, 1980). Functional limitations, combined with a lack of capital, education, training, and job experience, lead the consumer to consider nonemployment income as a viable alternative to work.

The most pervasive policy issues that present barriers to employment for people who are blind or visually impaired are financial disincentives. This population is often financially better off if they do not work. Lack of choice concerning rehabilitation services is also a barrier noted by several researchers, along with inadequate education for college preparation and computer technology. Alternatives to many of these barriers have been discussed and could result in increased employment opportunities for individuals who are blind or visually impaired.

Technology Issues and Barriers

In a discussion of the impact of technology on skill formation and career development of persons with visual impairments and blindness, Mather (1994) related that some workers found their career paths shaped by the technology provided by their employers. He advocated that rather than relying on adaptive technology, methods be devised so that persons with visual impairments can access standard equipment with as little modification as possible. The development of socialization and communication skills of workers with visual impairments was emphasized since socialization and training opportunities are vital to maintaining technological equity.

In a discussion of the use of graphical user interface (GUI) systems by persons who are blind or visually impaired and how this use impacts employment, Melrose (1995) questioned whether access technology can remain current with general technological advances. Melrose advocated that persons who are blind or visually impaired demand equal access by program developers and require government entities to adhere to regulations requiring that all software be accessible. According to Cavenaugh, Giesen, Laney, Maxson, and Johnson (1997), some developers have expressed concerns with providing accessibility to users with disabilities, but they admit that providing access to people who are blind is their most significant weakness. Therefore, it is essential that rehabilitation service providers and educators keep up-to-date about technological advances and provide appropriate education to persons needing access equipment.

Wakefield (1995) maintained that the move by many employers to a graphics-based Windows environment will lead to the reduction of computer-oriented skills (and subsequently jobs) that persons with visual impairments are able to perform. Applications of access packages are version specific. Screen readers may have difficulty corresponding with the text on the screen, and screen readers do not access error messages from the screen. Gill (1995) echoed these concerns, but maintained that the issue of providing additional training by persons with visual impairments utilizing a GUI environment is also a significant barrier to computer use. Additionally, the greater time required for a person with a visual impairment to access the GUI environment compared to a sighted peer has not been addressed.

There is less research on technological issues concerning barriers to employment for individuals who are blind or visually impaired than on other issues. Training for consumers on adaptive technology is a problem, as is inadequate

access to Windows environments for people with visual impairments. Technology improves so quickly that there is concern that GUI systems cannot keep up-to-date with the changes.

Conclusions

Clearly there are many barriers to employment of people who are blind or visually impaired. There is a general consensus that overcoming these barriers would lead to equal employment opportunities. Research indicated that common barriers include the following: (a) transportation, (b) clients' skills and education, (c) employers' attitudes, (d) government-sponsored work disincentives, (e) vocational rehabilitation counselors' heavy caseloads, and (f) problems in providing adaptations. Access to adequate health care coverage, and improved rehabilitation service choices and delivery need to be addressed. There are, however, many more barriers that prevent this population from working to their full potential. Further research should address these barriers and develop methods to overcome them to insure equal access to job opportunities for individuals who are blind or severely visually impaired.

Methodology

The data were analyzed using descriptive data techniques (e.g., frequency analysis) and appropriate quantitative analysis (e.g., Chi-square, factor analysis, ANOVA). Responses from the open-ended questions were categorized into themes and percentage responses were calculated for each theme.

Names were drawn from the American Foundation for the Blind's (AFB) Careers and Technology Information Bank (CTIB) and the RRTC's National Consumer Feedback Network (NCFN), two national databases of people with visual impairments who agreed to participate in research projects and to answer inquiries from consumers and professionals. From each database, 200 names were randomly selected from a subsample of people currently employed and living in the 48 contiguous United States. Survey instruments in the appropriate media were mailed from AFB to CTIB members and from the RRTC to NCFN members. Self-addressed, stamped envelopes were included for the respondents' convenience. Follow-up reminder postcards were sent to both CTIB and NCFN members after a 2-week period. A response rate of 44% (n = 166) was obtained.

Questionnaires contained items describing respondents' current employment, problems locating and retaining employment, job search methods, barriers to employment, vocational rehabilitation services, helpfulness of various services and supports, and demographic items. The survey contained both closed-ended responses and open-ended questions.

Results

Demographic Characteristics of Respondents

The majority of respondents are White (90%) with a few Blacks (6%) and Hispanics (4%) also participating. Responses are almost equally divided between females (51%) and males (49%).

The education level ranges from the 5th grade to doctoral level with a bachelor's degree as the average. During elementary and high school, the majority of respondents attended regular public or private schools (61%). Ten percent studied in a school for the blind and 25% attended both regular schools and schools for the blind. Most respondents (78%) had a visual disability during high school. The average age of onset was 9 with 52% visually impaired at birth.

The majority of respondents prefer Braille (31%) or large print (27%), followed by tape or talking books (19%), computer diskettes (10%), regular print (5%), and CCTVs (5%). Among Braille readers, almost everyone reads Grade Two Braille (93%).

The majority of respondents live in large cities with more than 100,000 people (33%) or suburbs of large cities (22%). Twelve percent live in medium cities (50,000 to 100,000 people), 17% in small cities (10,000 to 50,000), 9% in towns (less than 10,000), and 7% in rural areas or farms.

Reflecting the general transportation options available in large cities, respondents travel to work by public buses (25%), are driven by family or friends (22%), are passengers in car pools (13%), use paratransit (7%), or walk to work or use a scooter or wheelchair (7%). Six percent travel by train or subway, 5% travel by taxi, 3% employ a driver for their own car, and 2% drive themselves. A small group of respondents (7%) work from their own home.

While all the respondents are legally blind, their functional vision varies a great deal. Forty-three percent have "no useable vision," 24% have "very little useable vision," and 33% have "quite a bit of useable vision." Excluding those who were visually disabled at birth, the majority (67%) experienced a gradual vision loss, while 33% had a sudden vision loss. The degree of vision loss is stable for most respondents (76%), while 23% are experiencing a decrease in vision.

The majority of respondents have no other health problems (83%). Of those respondents who reported additional health problems, most (26%) have musculoskeletal disorders (such as arthritis and scoliosis); 21% have cardiovascular diseases (including high blood pressure, angina, and stroke); 16% are diabetic or have digestive system disorders; 11% have neurological problems (such as post-polio syndrome, multiple sclerosis, or cerebral palsy); 8% are hearing impaired; 8% have allergies; and 11% have other health problems (such as cancer, asthma, and albinism).

Reflecting the fact that the average age at onset of visual impairment was 9 years, the majority of respondents were not employed when their visual disability began to affect their daily activities (74%). They have been employed in their current job an average of 11 years (from 1 month to almost 43 years) and 23 years for their entire work history (from 3 years to 62 years). Most of their employment history has occurred while visually impaired (average of 19 years with a visual disability). Respondents' average age is 47 (from 25 to 83 years).

Current Employment

All respondents are currently employed and work an average of 40 hours per week (actual responses range from only 1 hour per week to 81 hours per week). The

majority of respondents work more than 20 hours per week (94%). Most respondents work for a private company or business (31%) or state government (26%). Other respondents are self-employed in their own business, professional practice, or farm (14%); work in an industry for the blind (14%); or work for local (7%) or federal governments (6%). A few respondents hold two jobs (3%).

Most respondents are either "very satisfied" with their current job (41%) or "satisfied" (35%). The others are "very dissatisfied" (5%), "dissatisfied" (9%), or "neutral" (10%).

The average annual income level is between $30,000 and $34,999. This amount includes wages; salaries; retirement income; interest income; dividends; net income from a business, farm, or rent; and other forms of income (not included is social security, unemployment, public assistance, or SSI). Approximately one third of the respondents earn less than $25,000 a year, one third earn between $25,000 and $39,999, and one third earn $40,000 or more a year. Although most respondents do not limit their income (88%), 12% do in order to keep other benefits such as medical insurance or SSI.

Employment Problems Due to Visual Disability

Respondents were asked a series of questions to determine what barriers presented the most substantial problems in getting a job. Responses to this question were grouped into eight categories. Of the respondents who answered this question, the majority (41%) indicated the employer's attitude was the biggest barrier to

Underemployment. Thirty-five percent of the respondents felt they were employment. Respondents also had problems with transportation and mobility (17%), reading print (14%), obtaining adaptive equipment and accommodations (9%), limited opportunities (7%), personal fears and uncertainties (3%), inability to recognize faces (2%), and other problems (7%).

Changes in Job Due to Visual Disability

Job changes. Although most respondents have never changed the type or kind of paid work they perform (72%), 28% did change their type of work to accommodate their visual disability. Fewer respondents changed the number of hours they worked per week because of their visual disability (21%). In fact, most respondents found it quite difficult to change jobs due to their visual disability (82%). Respondents believed it was difficult to change jobs because of employers' attitudes (27%); transportation (20%); adaptive equipment, including training and cost of equipment (19%); limited opportunities (16%); print access (7%); and other barriers (11%).

Job advancement. Responses were more split when asked, "Does your visual disability make it difficult for you to advance in your present job?" Fifty-eight percent had no difficulty, while 42% found it difficult to advance. Among respondents who found it difficult to advance in their jobs due to their visual disability, reasons included limited opportunities (26%), problems with print access (17%), limited skills and adaptations (14%), employer attitudes (14%), transportation (13%), work speed (8%), and other reasons (8%).

underemployed. Sixteen percent of the respondents stated that they were underemployed with no further explanation. Another 16% believed they had not advanced in their careers over time. The majority (22%) believed they were overeducated for their present position, while 14% needed skills and adaptive equipment to end underemployment. Lack of opportunity and employers' attitudes each garnered 9% of the responses. Other reasons for underemployment were transportation (5%), physical reasons (3%), and other reasons (7%).

Firings, layoffs, and resignations. Only 18% of the respondents had ever been fired from a job, laid off, or told to resign because of their visual disability. In 32% of the responses, no explanation was offered. Other respondents cited employers' attitudes and safety issues (32%), lack of proper skills and adaptive equipment (23%), and the belief that sight is necessary for the job (13%).

Access to training programs. Almost a quarter of the respondents (24%) were denied access to a training program because of their visual disability. Twenty-four percent of the respondents offered no further specific explanations. Among those offering explanations, 38% indicated that training programs were not accessible to them. In 30% of the responses, employers' attitudes and safety concerns restricted participation in training programs, while 8% lacked transportation to the training site.

Job Search

Sources of help for locating jobs. Respondents were provided a list of how people might look for jobs and asked to identify the sources of advice or help they used to look for their current or past jobs. Respondents used friends (77%), state rehabilitation agencies (62%), newspapers or job listings (51%), relatives (43%), teachers or school personnel (42%), state employment agencies (24%), employers (21%), books about job-finding (19%), private employment agencies (18%), other state agencies (9%), or the Internet (4%).

Respondents were asked to volunteer additional sources for locating jobs that had not been previously listed. Twenty-five percent suggested networking with coworkers, customers, or others; direct business contacts; and government or rehabilitation contacts.

Most helpful sources for locating employment. Respondents were next asked which of the sources were the most helpful. An almost equal number of responses chose significant others and friends (27%) and state rehabilitation agencies (26%). Each of the following three categories received about 10% of the responses: teachers or other school personnel (12%), networking (11%), and relatives (9%). Other helpful sources for locating employment were newspapers, job listings, or job fairs (7%); the Internet (2%); employers (2%); private employment agencies (1%), and other sources (4%).

Most important things done by significant other. Respondents were asked, "What was the most important thing your significant other (spouse, parent, roommate) did to help you become employed?" The majority of respondents (46%) described the encouragement they had been given by their significant other. Other supports included transportation (24%); clerical assistance, including readers (16%); domestic duties (4%); adaptive equipment and accommodations (3%); job leads (3%);

financial support (3%); and various other supports (1%).

Most important things done by employer. Respondents were also asked, "What was the most important thing your current employer did to help you become or remain employed?" Employers provided adaptive equipment and accommodations (35%); offered encouragement and assistance (21%); provided education and training (16%); provided clerical assistance, readers, and drivers (15%); and allowed flexibility in time, job duties, or location (13%).

Barriers to Employment

Respondents were provided a list of barriers that might discourage someone from looking for work. They were asked to check each barrier that affected them when they were looking for their current or previous job. The 28 barriers were grouped into seven general domains based on factor analysis (transportation; attitudes; loss of benefits; lack of skills; problems with equipment, computers, or print access; problems with family; and other reasons). Additional comparisons using One-Way analysis are detailed in the larger report (Crudden, McBroom, Skinner, & Moore, 1998).

Transportation. The majority of respondents (67%) identified problems finding and accessing transportation.

Attitudes. Under the general domain of attitudes, 69% of the respondents experienced problems with employers' attitudes about blindness, 57% with discrimination in hiring, 48% in locating information about possible jobs, and 43% with the general public's attitude about blindness. Unfortunately, 36% of the respondents had problems with the skills or attitudes of rehabilitation counselors or placement staff.

Loss of benefits. Loss of benefits was not much of a problem for most respondents. Only 18% feared loss of benefits (e.g., SSI, SSDI, or other sources of income); 8% were concerned about loss of medical insurance (e.g., health insurance, Medicaid); and 4% with loss of housing.

Lack of skills. Some respondents believed they were not prepared for employment because they lacked relevant work experience (27%), lacked job skills (17%), lacked job training (17%), lacked education (10%), or possessed poor interviewing skills (10%). Possibly as a result of these deficits, 17% held a poor self-concept.

Problems with equipment, computers, or print access. Access to print and computers continue to be problems for employees with visual impairments. Over half of the respondents experienced employment barriers because they were not able to read printed materials (53%). One fourth (25%) faced barriers caused by graphical user interfaces (GUI), 18% did not know how to use a computer, 27% needed money to obtain equipment, and 24% faced lengthy delays in securing equipment.

Problems with family. The majority of respondents did not experience any barriers to employment due to family influences. Only 7% identified barriers caused by family responsibilities, and 6% were discouraged from seeking employment by family or friends.

Other reasons. Lack of available jobs in the community was cited as a barrier by 36% of the respondents. Twelve percent were concerned about the possibility of being denied a promotion or transfer, 6%

believed that potential employers thought they were too old to hire, 13% believed their serious visual disability created barriers to employment, and 4% had other serious health problems creating barriers to employment. Additional barriers to employment were specified by 14% of the respondents (including attitude of others, lack of adaptations and skills, problems with transportation and mobility, and financial

problems).

Summary. The barriers experienced by the majority of respondents are employers' attitudes about blindness (69%), finding and accessing transportation (67%), discrimination in hiring (57%), not being able to read print materials (53%), and difficulty locating information about possible jobs (48%).

Vocational Rehabilitation Services

Receipt of vocational rehabilitation services. Vocational rehabilitation services are traditional avenues to counteract barriers to employment. In fact, 92% of the respondents received state vocational rehabilitation services at one point in their lives.

Vocational rehabilitation agencies offer a number of services dealing with employment-related skills and preparing clients for employment. Sixty-six percent received financial assistance for educational expenses; 48% were provided readers; 34% were given actual and appropriate job leads; 30% received information about jobs matching their skills, abilities, and interests; 28% received training in job skills (other than education or computer training); 26% received employment-related counseling for themselves or their families; 17% received on-the-job training; 15% were assisted in developing a resume; and 8% were referred to an employment agency.

For the majority of respondents, vocational rehabilitation agencies purchased equipment, aids, and devices (59%) or computer equipment (31%). A third of the respondents (33%) were provided training in computer usage. Vocational rehabilitation agencies purchased tools or uniforms for only 9% of the respondents. Additional services were received by 15% of the respondents, including job placement and support services, activities of daily living assistance, financial assistance, Braille training, and counseling and support services.

In general, the majority of services provided by vocational rehabilitation agencies included financial assistance for educational expenses (66%); purchase of equipment, aids, or devices (59%); training in orientation and mobility skills (59%); and readers (48%).

Most important service received from vocational rehabilitation agency. Respondents were also asked, "What was the most important thing your rehabilitation counselor did to help you become employed?" The majority (31%) valued the help they received in locating jobs, including setting up interviews, contacting employers, and providing references. Respondents also cited education and training (27%), equipment (14%), emotional support and counseling (13%), readers (8%), financial support (3%), and travel assistance (3%).

Helpfulness of Vocational Rehabilitation Agency Services

Respondents were provided a list of ways that vocational rehabilitation agency

services were helpful in their current employment situation. More than a third of the respondents who had received services believed vocational rehabilitation was helpful in obtaining jobs (39%) or improving their job performance (34%). Respondents also believed that vocational rehabilitation services made them more competitive with nondisabled workers (28%) and assisted them in retaining their current jobs (25%). A smaller number of respondents obtained skills to independently find future jobs (15%), to improve their ability to communicate with others (12%), to improve their ability to participate in interviews (10%), and to improve their ability to obtain better jobs (8%).

Respondents were also asked if the rehabilitation services they received helped in other ways not listed in the questionnaire. They mentioned education and training (44%), equipment and adaptations (24%), job placement and support services (20%), and other services (12%).

Helpfulness in Obtaining Jobs (Strategies for Obtaining Jobs)

Respondents were presented with a list of 16 items or statements and asked to select a number from 1 to 5 to indicate how helpful the item was in obtaining their current or previous job. Having an education and having previous work experience were rated as the most helpful (both scored 4.33), followed by being able to get around by yourself (4.25), and having a positive attitude (4.09). Rated average in importance was being assertive (3.97), having adaptive equipment (3.94), having a relative or friend who helped locate the job (3.54), receiving orientation and mobility training (3.47), receiving computer training (3.41), being inspired by someone with a visual disability (3.20), receiving job skills training (3.12), and knowing the employer before being hired (3.01). Rated less helpful was provision of transportation (2.73), working with a rehabilitation counselor (2.71), and receiving interview training (2.57).

Lifestyle Changes Due to Visual Disability

Many people make decisions about their lifestyles when trying to find or keep a job. For example, a person may move from an area with few jobs to an area where more jobs are available. Respondents were asked if they had made similar lifestyle choices that were influenced by their visual disability. Of the 100 responses, the majority (48%) focused on transportation issues. Others relocated or planned to relocate to take advantage of job opportunities, or dealt with fewer job opportunities in their current location (39%). A small number of respondents (4%) made lifestyle changes due to family concerns or to access education (3%) and support systems (3%).

Self-Identified Reasons for Success

Respondents were offered the opportunity to explain why they had been successful in overcoming barriers to employment when many individuals are not successful. Their answers included personal motivation (34%); support from family members and significant others (15%); education and training (13%); credentials, previous job experience, and personal characteristics (7%); a strong work

ethic (6%); availability of adaptations (5%); luck and coincidence (5%); blind role models (3%); personal religious beliefs (3%); later vision loss (3%); mental and physical factors (2%); vocational rehabilitation services (1%); family responsibilities (1%); and legal interventions or the threat of them (1%).

Suggestions for Others with Visual Disabilities Who Want to Work

Respondents were given the opportunity to offer suggestions to others with visual disabilities who want to work. The majority of responses (27%) centered around determination, persistence, and independence, while 17% recommended pursuing education and training. Another group recommended developing networking and mentoring opportunities (10%), and setting career goals (7%). Individuals were told to seek help from appropriate sources (6%), develop a work history (5%), and locate the right adaptations (5%). The respondents also suggested that job candidates perfect their interviewing skills (5%) and job-related skills (5%). Other responses included flexibility (3%), transportation and mobility (3%), appearance (2%), discrimination (2%), and divine intervention (1%).

Discussion

All persons participating in this research project were volunteers, thus creating the typical research biases associated with a volunteer sample (i.e., motivational issues, lack of representation of the entire population, etc.) (Borg & Gall, 1989). Indeed, respondents to this survey are believed to be nonrepresentative of the general population of persons with visual impairments who are employed, in that survey respondents are typically more educated, employed in more professional occupations, have fewer secondary health problems, and earn higher salaries. For example, in the study conducted by Moore, Crudden, and Giesen (1994), the average educational level of direct labor workers in industrial settings was 10th grade (as opposed to college graduate) and the average weekly wage was $191 per week or approximately $9,932 per year. Almost half (45%) of that same sample of 502 legally blind employees reported a major health or physical problem besides blindness, compared to 17% of this sample.

This survey also includes only persons who are severely visually impaired and employed. The issue of employment makes these respondents atypical of the U.S. population of persons who are visually impaired. In a recent review of trends in labor force participation among persons with disabilities, Trupin, Sebesta, Yelin, and LaPlante (1997) estimated a labor force participation (LFP) rate of 28.9% for adults blind in both eyes in 1994. For those characterized with a visual impairment in both eyes, the LFP rate increased to 59.8% in 1994. For working age people with a severe functional limitation in seeing print, McNeil (1993) reported an employment rate of 26%.

Barriers to employment as perceived by rehabilitation providers focused on administrative issues interfering with successful job placement. Overemphasis on case closure; reliance on segregated employment settings; heavy caseloads (Link,

1975); and failures of the educational system (Hopf, 1991) are all cited by providers as barriers to employment among persons with visual impairments. While some of these same issues were cited by consumers in the literature review and survey, these were not the primary issues, indicating that consumers and rehabilitation professionals appear to have divergent views on barriers to employment for persons with visual impairments.

Rehabilitation providers did recognize that public attitudes and specifically, employer attitudes, negatively

Other social and community issues negatively influencing employment for persons with visual disabilities included socioeconomic factors, such as low population density, high unemployment rates, low educational levels, low wages, rural culture, and minority status (Gandy, 1988; Offner et al., 1992; Pfeiffer, 1991; Sanderson, 1997); transportation factors (Moore & Wolffe, 1997); and lack of housing supports (Moore & Wolffe). The impact of government-generated disincentives on employment was also cited as a barrier by rehabilitation providers (Link, 1975; Moore & Wolffe). Consumers appeared in agreement with some of these issues, particularly those concerning transportation (Malakpa, 1994; McBroom, 1995; Salomone & Paige, 1984).

When targeting consumer deficits as the focus of employment-related barriers, rehabilitation providers were most apt to cite lack of employment experience or employment-related skills as a barrier (Hopf, 1991; Link, 1975; Moore & Wolffe, 1997). Some consumer reports echoed this assessment (Corn et al., 1985; Malakpa, 1994; Salomone & Paige, 1984). Lack of access to employment information was also

impact on employment opportunities (Dahl, 1982; Moore & Wolffe, 1997). Consumers were in strong agreement that attitudinal barriers represent a significant barrier to employment (Malakpa, 1994; Moore & Wolffe; Salomone & Paige, 1984), particularly for women (Corn et al., 1985; Dixon, 1983; Hill, 1989); minorities (Sanderson, 1997); and those living in rural areas (Offner et al., 1992). Research among employers confirmed that these attitudes exist and negatively impact employment for persons with visual disabilities (Wacker, 1976; Woods, 1996).

cited by rehabilitation providers (Moore & Wolffe) and consumers (Salomone & Paige; Schriner & Roessler, 1991) as a barrier to employment. Employers, however, were more likely to be concerned about the worker having the skills and abilities to perform necessary job tasks (Greenwood & Johnson, 1985) and providing on-the-job accommodations (Greenwood & Johnson). The issue of potential skill deficits and job accommodations is particularly apparent in technology issues when utilizing technological advances remains a challenge (Melrose, 1995).

Barriers to employment identified by consumers through the national survey were consistent with barriers identified through the literature review. Namely, the primary barriers to employment for persons with visual impairments are employer attitudes, transportation and mobility problems, print access, adaptive equipment and accommodations, and lack of job opportunities. This consistency indicates not only general agreement among consumers, but also that despite the efforts of involved parties, progress is not being made in systematically eliminating or overcoming these barriers. For example, the survey of

trends in labor force participation (LFP) among persons with disabilities reflects that the LFP rate for persons blind in both eyes dropped from 36.2% in 1983 to 28.9% in 1994 (Trupin et al., 1997).

This national survey confirmed the perception that employer and public attitudes represent an employment barrier for those who are blind. Approximately 41% of persons responding to the survey stated that employers' attitudes toward visual disabilities was the biggest problem in getting a job. Additionally, while 82% of the respondents found it difficult to change jobs due to a visual disability, 27% attributed this difficulty to the attitudes of employers. Of those persons who believe it is difficult to advance in their current job due to their visual disability, 11% attributed this difficulty to employer attitudes. Transportation issues have the same limiting impact, with the additional limitation that movement to areas without public transportation is perceived by many as unrealistic.

It is interesting to note that while in both this survey and in the existing literature, employer/public attitudes and transportation remain the most frequently cited barriers to employment, there is a paucity of research regarding solutions to these barriers. There is also no existing national initiative to directly address these barriers.

Approximately 44% of consumers participating in the national survey attribute their employment to successful networking with coworkers, customers, and others rather than to a service delivery system. Approximately 40% of consumers attribute their ability to become employed to their own direct business contacts through cold calls to employers, job fairs, etc. Consumers were also likely to turn to friends (77%) and/or relatives (43%) for help in finding a job. A much smaller number (16%) attributed their employment to assistance from government agencies, rehabilitation providers, or school personnel. Given rehabilitation providers' awareness of numerous administrative barriers to providing assistance in overcoming barriers to employment, it should come as no surprise that consumers find their own efforts to overcome barriers to employment more effective than reliance on service providers. It appears that when consumers find their independent efforts to remain/become employed are unsuccessful, they turn to rehabilitation providers for assistance; efforts to obtain assistance from service providers are met with mixed, and often disappointing results.

An example of this type of problem is clearly visible when one examines transportation issues for persons with visual disabilities. Transportation issues were reported by consumers as the biggest problem caused by a visual disability in getting a job or changing jobs. Transportation was also a barrier to job advancement and led to underemployment. Yet when asked the most important thing rehabilitation counselors did to help consumers become employed, only 3% mentioned assistance with travel. Twenty-five percent of consumers stated that the most important thing their significant other had done to help them become employed was providing transportation. It is essential that vocational rehabilitation counselors are fully aware of community resources and agency policies on providing transportation services to vocational rehabilitation clients, particularly during their initial job search and for an

appropriate period after employment.

Difficulty reading printed materials was listed as the third largest barrier to employment (after employer attitudes and transportation), with 17% of the respondents indicating that problems reading print caused difficulties in getting a job. Inability to read print was cited by 7% of the respondents who believe they would have a problem in changing jobs and 17% of those who believe it would be difficult for them to advance in their current jobs. Difficulty reading print is likely compounded by difficulty in obtaining adaptive equipment or appropriate training in adaptive equipment. Approximately 19% of those persons who believe they would have difficulty changing jobs and 25% of those who believe it would be difficult for them to advance in their current job attribute these difficulties to problems with adaptive equipment and training. This indicates that while technology has made great strides in improving access to printed materials for persons who are blind, print access continues to be a barrier to employment and that adaptive technology to overcome this barrier remains an ongoing issue for those who are already employed. Of those who reported problems with equipment, computers, or print access, 24% faced lengthy delays in securing equipment. While it is not known how many of those were vocational rehabilitation clients (92% of the respondents reported receiving vocational rehabilitation services at some point in their lives), it is recommended that vocational rehabilitation agency administrators make every effort to streamline procurement/purchasing guidelines for adaptive equipment and to ensure that vocational rehabilitation counselors are familiar with these guidelines in order to facilitate their expeditious purchase. Many states allow for "state contract" lists which alleviate the need for competitive bids in purchasing certain supplies or equipment. Maximum utilization should be made of such resources in order to avoid unnecessary delays in securing equipment. Likewise, maximum utilization should be made of comparable benefits such as civic or service clubs (e.g., Lions Club, Kiwanis Club, etc.) or other third party resources (e.g., Worker's Compensation, Social Security Administration, etc.) in purchasing needed equipment.

Because this survey was completed by persons who are successfully employed, efforts were directed at identifying the characteristics or conditions which led to their success in hopes that this information would provide insight in helping others overcome barriers to employment. Persons who attempted to explain their employment success were most likely to attribute their success to their personal motivation or to a strong work ethic, a factor over which the worker has control and which rehabilitation providers appear to have limited influence. These characteristics of success are linked with suggestions made by survey respondents to others seeking employment; namely, be determined, persistent, and independent. Respondents also attributed their success to family members and/or significant others. While this may appear to be another factor over which rehabilitation providers have limited control, referral to consumer groups and efforts to develop peer mentoring systems and support groups may generate support systems for those with limited or negative family support.

Conclusions

Differences in perspectives among rehabilitation providers, consumers, and employers indicate that a multifaceted approach is required in overcoming barriers to employment. Each party appears to be aware of particular areas influencing the employment process at different points in the rehabilitation process. These issues appear to be interrelated (i.e., as rehabilitation counselors become more overworked or are less well trained, their efforts to assist consumers overcome the more difficult barriers to employment, such as transportation or employer attitudes, are less effective, and hence rehabilitation services are perceived as less beneficial by consumers). However, in cases where rehabilitation providers are successful in assisting consumers locate employment or obtain education, training, or equipment, these services are perceived as very helpful by consumers.

Employer attitudes, transportation, and print access continue to be major barriers to employment for persons who are blind. No concerted national effort is currently directed toward resolving any of these issues. While rehabilitation providers are sometimes successful in resolving these issues for individuals, the pervasiveness of these barriers indicates the need for national policy changes or initiatives to overcome these barriers. Such initiatives could include an aggressive public awareness campaign by the Equal Employment Opportunity Commission with regard to complaints filed under Title I of the ADA to help make employers more aware of their responsibilities under Title I. Likewise, maximum utilization must be made of the 10 regional Disability and Business Technical Assistance Centers (DBTACs) in providing information and referral, technical assistance, and training on all aspects of the ADA. Additionally, consideration should be given to developing specific strategies for addressing the barriers by the National Council on Disability and the President's Committee on Employment of People with Disabilities. Such efforts would require the collaborative efforts of these and other federal agencies, particularly as they relate to the enforcement of existing statues and regulatory guidelines.

Although rehabilitation providers, employers, and consumers have differing perspectives regarding employment barriers, all parties agree that employer attitudes, transportation, and print access continue to be major barriers to employment for persons with visual disabilities. Because the nature of the barriers is well documented, it is recommended that future research be directed toward determining how these barriers are currently being overcome and identifying potentially successful strategies and policies for the future. The RRTC on Blindness and Low Vision at Mississippi State University will pursue this research agenda through intensive interviews with rehabilitation providers who have had success in assisting persons with visual disabilities in overcoming these employment barriers. Focus groups will also be conducted with rehabilitation providers, employers, and consumers to generate additional input regarding which strategies and accommodations have proven helpful in overcoming employment barriers. Other researchers are encouraged to pursue their own efforts to identify strategies to overcome these and other barriers to employment.

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