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**The Impact of Career Mentoring on Employment Outcomes
for Legally Blind College Students**

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Students

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Abstract

Introduction: College graduates with blindness often face challenges in securing competitive employment after graduation. Working with a mentor who is also blind, and working in the same field, can provide important benefits to overcome these barriers.

Methods: A nationwide longitudinal study, involving random assignment to an intervention group working with a mentor or a comparison group given traditional career resources, evaluated changes in college students' job-seeking self-efficacy, assertiveness in job hunting, and career adaptability over the course of one year as they prepared to graduate and enter the job market. Employment outcomes, job satisfaction, and evaluation of the mentoring program were also measured.

Results: Those working with mentors demonstrated increased job-seeking self-efficacy, career adaptability, and significant gains in assertiveness in job-hunting compared to those receiving only traditional job search resources. Although no significant differences were found between groups for employment rate or job satisfaction, participants reported high satisfaction with the program.

Discussion: Working with a mentor demonstrated positive trends for self-efficacy, career adaptability, and significant increases in job-hunting assertiveness among legally blind college students. Participants were highly committed and found the program beneficial. Small sample size may have limited the ability to detect significant differences in employment outcomes.

The Impact of Career Mentoring on Employment Outcomes for Legally Blind College Students

Full time employment is difficult to secure during challenging economic times, and specific barriers faced by individuals with blindness and visual impairments (B/VI) are well documented (Coffey, Coufopoulos, & Kinghom, 2014; Crudden & McBroom, 1999; McDonnall, Zhou, & Crudden, 2013). Challenges faced may include lack of early work experience, transportation difficulty, limited exposure to career role models, negative employer attitudes, underdevelopment of soft skills and blindness skills, and low self-advocacy and assertiveness.

Despite having the highest rate of postsecondary attendance among students with disabilities with approximately 78% attending postsecondary school (Newman, Wagner, Cameto, & Knokey, 2009), youth with B/VI have difficulty securing employment (Burgstahler, 2001; McBroom, 1995; Nagle, 2001; Roessler, Hennessey, & Rumrill, 2007). The current unemployment rate for recent college graduates averages about 7.2% (Davis, Kimball, & Gould, 2015). Given that this rate does not reflect discouraged workers (e.g., individuals who may have stopped looking for work because of repeated discrimination, lack of necessary supports, and limited job opportunities), that unemployment rate is likely considerably higher for college graduates with B/VI. Although data are not available on employment rates for this specific population, data from the Community Population Survey indicates that only 53.8% of non-institutionalized persons aged 25-34 with a visual disability were employed during 2014 (Bureau of Labor Statistics, 2014).

Many strategies have been used to assist students with disabilities to transition into employment (e.g., Getzel & Briel, 2008; Getzel, Briel, & Kregel, 2000; Roessler et al., 2007). Efforts include job clubs, employability workshops, work experience, and career counseling.

Some studies have focused on the use of career mentors that establish relationships through face-to-face meetings, email, or telephone (Burgstahler & Cronheim, 2001; Getzel & Briel, 2008; Knouse, 2001; Powers, Sowers, & Stevens, 1995; Whelley, Radtke, Burgstahler, & Christ, 2003). Career mentors may provide critical experiences for transition youth with B/VI by serving as models of success, providing encouragement and expert advice, as well as assisting in the development of self-efficacy, career adaptability, and assertiveness. Research indicates that youth with B/VI working with mentors achieve significant increases in career decision-making efficacy and hope for the future (Bell, 2012; Cavanaugh, McDonnall, & Giesen, 2010).

While the implementation of mentoring programs vary widely, common elements include career counseling, job shadowing, and job placement assistance (Briel & Getzel, 2001; Burgstahler & Cronheim, 2001; Getzel & Briel, 2008; Hagner, 2000; Whelley et al., 2003). Multiple strategies have been identified to improve postsecondary outcomes among students with disabilities (e.g., knowledge of ADA and SSA information, encouraging self-advocacy, and including mentors with disabilities) (Burgstahler, 2001; Burgstahler & Crawford, 2007; Roessler, et al. 2007; Wilson, 2003). CareerConnect, an online e-mentoring resource provided by the American Foundation for the Blind (AFB) includes a searchable database of over 1,000 mentors with B/VI, is currently the only ongoing mentoring program for individuals with B/VI. (AFB, 2015). To date, no studies have systematically evaluated the effectiveness of mentoring programs on employment outcomes for recent college graduates with B/VI.

In this study, legally blind college students seeking employment were paired with career mentors who are also blind and working in the students' career area. Mentors can serve as role models and share experiences that address unique concerns of students with B/VI preparing for jobs (e.g., disclosure, requesting accommodations, and self-advocacy). Improving self-efficacy,

or confidence in one's own abilities to perform a specific task, may be especially critical for students with B/VI. College graduates with B/VI may have limited to no early work experiences, which play an important role in securing future employment (Landmark, Ju, & Zhang, 2010; McDonnall & Crudden, 2009; McDonnall, 2010; McDonnall, 2011; McDonnall & O'Mally, 2012). Self-efficacy is improved through both mastery experiences and vicarious learning through exposure to successful role models (Bandura, 1994). By pairing students with mentors who are blind and employed in the students' field of interest, self-efficacy for finding employment may be enhanced by the presence of a role model as well as discussions and activities such as resume development and interview role plays.

Students with B/VI may lack assertiveness in job-seeking behaviors because they typically have few early work experiences. Securing meaningful employment in an unstable economy can be challenging, and assertiveness may be a trait that would benefit those facing additional barriers. An attitude of career adaptability and resilience can positively impact a person's capacity to face challenges in a work environment (Rottinghaus, Day, & Borgen, 2005), which may help students with B/VI prepare for employment. Working with a career mentor who is blind would likely allow students to build their confidence in job-seeking and increase their understanding of the realities of a competitive job market.

This study provides the first empirical evaluation of the effectiveness of a career mentoring program for legally blind college students. We expect that working with a mentor will significantly improve self-efficacy, assertiveness, and career adaptability by providing students with direct experiences and a successful role model. Primary hypotheses for this study are:

1. Participants paired with mentors will have a higher employment rate than those in the comparison group.

2. Of the students who secure employment, those paired with mentors will report higher job satisfaction than those who were not paired with mentors.
3. Working with a mentor will lead to significant increases in job-seeking self-efficacy, assertiveness, and career adaptability.

Methods

Design

In this longitudinal experimental study, students were randomly assigned to either work with a career mentor for one year, or to receive only traditional career preparation resources. Students participated in one of four cohorts based on their expected graduation date, to allow for assessment of pre and post-graduation measures.

Participants

Participants ($N = 77$) included 26 mentees, 26 mentors, and 25 comparison students that constituted a nationally diverse sample with representation from 30 states. The majority of students and mentors were White (70.59% and 80.77% respectively), with 7.79% Black, 10.39% Hispanic, 2.60% Asian, and 5.19% other races. Women made up 62.75% of students and 65.38% mentors. Students ranged in age from 20 to 35 ($M=25.88$, $SD=4.35$), and mentors ranged in age from 25 to 63 ($M=48.00$, $SD=10.13$). Most students were undergraduates (72.55%), with a wide variety of majors including: Social Sciences (21.57%), Science, Technology, Engineering, and Math (17.65%), Communication, Journalism, English (13.73%), and Law/Government/Public Administration (11.76%). Most mentors were currently employed (80.77%), with 19.23% recently retired, and most had a graduate degree (72.96%; with 26.92% having a doctoral degree).

Eligibility

Students eligible to participate were legally blind college or graduate students under age 35, living in the U.S., who were within a year of graduation and seeking post-graduation employment. Mentors included those who were currently employed or recently retired, legally blind, and living in the U.S. Participants self-reported legal blindness, which was defined in the eligibility survey as “having central visual acuity of 20/200 or less in the better eye with best correction or widest diameter of visual field subtending an angle of no greater than 20 degrees.”

Recruitment

Extensive recruitment efforts were made from 2011-2014 to identify a nationally representative sample. Major avenues for recruitment included VR agencies, consumer groups, professional organizations, multicultural organizations, college student services centers, and non-profit organizations. Recruitment efforts included over 3,000 personalized emails and phone calls, the development of a nationwide research participant registry, conference and media promotion (i.e. social media, listservs, news articles, radio interviews, paid advertisements), and assistance from an Advisory Council Board consisting of representatives of prominent consumer groups and professionals in the field of blindness.

Materials

Eligibility Survey. An online survey allowed interested students and mentors to report demographic information including their level of visual impairment, contact information, and other disabilities. Students reported major, expected graduation date, and future employment plans. Mentors provided employment status, education level, and employment information.

Employment Mentoring Manual. A 20-page manual was developed and provided in electronic format to students in the intervention group (mentees) and their mentors. The manual,

used in orientation, included: benefits of mentoring, tips for successful mentorships, codes of conduct, project details, and recommended discussion and activities (e.g. accommodation planning, blindness skills, disclosure, social skills, transferring academic technology skills to the workplace, transportation skills, career planning, job-seeking skills, job shadowing, and job placement). A revised version of the manual is publically available and includes resources and details about program structure (NRTC, 2016).

Resource Sheet for Job Seekers. A handout was developed and provided to all students, including the comparison group. This resource sheet included links to websites for information on: requesting accommodations, finding mentors, career exploration, disclosure, job opportunities, blindness skills, VR services, and transportation.

Job-Seeking Self-Efficacy (JSSE). Adapted from the JSSE scale for people with physical disabilities (Barlow, Wright, & Cullen, 2002), the 14-item scale (administered online at pre, 6 months, and post-test) asks respondents to rate their level of confidence in job-seeking activities from 1 (not very confident) to 7 (very confident). Items include confidence in requesting an application, producing a resume, traveling to an interview, presentation skills, working independently and with a team, requesting accessibility information, and disability disclosure. Reliability for this measure is high (.93), with concurrent validity supported by significant correlations with similar measures (Barlow et al., 2002).

Assertive Job Hunting Survey (AJHS). This adapted 22-item scale (administered online at pre, 6 months, and post-test) assesses the level of assertiveness individuals would use in seeking employment (Becker, 1980). Participants rated the likelihood that they would engage in assertive job-seeking behaviors from 1 (very unlikely) to 7 (very likely). Items include assertiveness in: requesting information, describing qualifications, networking, and contacting employers. The

AJHS has .82 reliability, and was validated with previous job hunting experience (Becker, 1980), and with other assertiveness and self-esteem scales (Strauser & Berven, 2006).

Career Adaptability Scale (CAS). This 11-item scale (administered online at pre, 6 months, and post-test) adapted from the Career Futures Inventory (Rottinghaus, et al., 2005) assesses individual sense of control over career destiny and adaptability. Participants rated agreement from 0 (strongly disagree) to 10 (strongly agree) in their ability to adapt to a changing work environment, control over career success, and resiliency. The CAS has high reliability (.85), and is significantly correlated with similar established scales (Harmon, Hansen, Borgen, & Hammer, 1994; Heppner, 1988; and Scheier, Carver, & Bridges, 1994).

Quarterly & Monthly Reports. All participants completed brief quarterly reports online to assess job-seeking activity and to monitor the mentoring relationship. Students were asked to report time spent engaging in job-seeking activities and the number of job applications submitted. Mentees submitted brief monthly reports to track communication with mentors.

Employment Outcomes. Administered online at six months and one year, all students reported their job preparation activities, challenging aspects of obtaining employment, and current employment status. Those employed reported start date, hours per week, salary, receipt of benefits, how they found their job and job satisfaction using adapted versions of the Abridged Job in General Scale (AJIG; Stanton, Sinar, Balzer, Julian, Thoresen, Aziz, ... Smith, 2002) and the Abridged Job Descriptive Index (ADJI; Russell, Spitzmüller, Lin, Stanton, Smith, & Ironson, 2004). Participants rated their level of agreement from 1 (strongly disagree) to 5 (strongly agree) on global job satisfaction, as well as satisfaction with pay, opportunities for promotion, supervision, and coworker interactions. The abridged versions maintain reliability (.75 to .85) and validity of the full instrument (Stanton et. al, 2002), and correlate with the original scales, as

well as the *Intention to Quit* measure (Parra, 1995), and other measures of job satisfaction (Russell et. al, 2014). Employed students in both groups also completed the *Intent to Leave* scale (O'Reilly, Chatman, & Caldwell, 1991), which assesses plans to leave and the extent to which they would prefer a different job. Job fit was assessed by asking respondents to rate their agreement from 1 (strongly disagree) to 10 (strongly agree) with how well their job matches their education level, experience, interests, and expectations for the type of work they would be doing after graduation.

Program Satisfaction. Mentors and mentees evaluated their experiences in the mentoring relationship and the project by rating 28 statements on a 10-point agreement scale. Items addressed communication, keeping in touch following the project, benefits, staff support, and helpfulness of materials.

Early Exit Survey. Mentors and mentees who exited the study prematurely completed a brief online survey to document the reasons for withdrawal.

Procedures

Upon approval for the protection of human subjects by the Mississippi State University Institutional Review Board, eligible students were randomly assigned to either the intervention group (mentees) or the comparison group. Participants completed consent forms and were told that the project was designed to measure the effectiveness of a mentoring program on employment outcomes for legally blind college students. Intervention group participants worked with a mentor, and comparison group participants received a career planning resource sheet. Participants completed online reports over the course of one year, and students received gift cards as incentives to participate and to offset any costs related to traveling to meet locally with mentors.

The initial goal was to partner students with mentors living within one hour from the student, and working in the student's field of interest. When this was not possible, distance mentorships were used. Local pairs were encouraged to meet face-to-face monthly, and distance mentors were encouraged to have extended phone meetings. Mentors were identified through recruitment efforts and the AFB CareerConnect database and volunteered their time.

Students participated in one of four cohorts based on their expected graduation date. Table 1 provides a study timeline by cohort. All students completed pre-test measures and within one week, mentees and mentors participated in separate distance orientation sessions. Orientation focused on the mentoring manual and relationship; therefore, the comparison group did not complete an equivalent. One week after orientation, each mentor/mentee pair was introduced by a conference call led by project staff.

For the remainder of the year, participants completed all measures online, with support from staff as needed. All students completed pre-test measures, 6-month measures, and post-test measures (at one year). All participants completed quarterly reports, and mentees completed monthly reports. Those who withdrew from the study prematurely completed an Early Exit Survey.

Results

Retention

A total of 51 students and 26 mentors participated in the project. Two mentoring pairs withdrew due to incompatibility, and one comparison participant did not complete all measures, resulting in an exceptionally high retention rate of 93.5%.

Job Search Scales

Analyses included pre and post-test correlations between measures and a factorial MANOVA to test for group differences from pre to post. Individual scores were calculated for each of the four job scales using established guidelines and analyzed using MANOVA and correlational tests.

Pre-Test. Scores on the JSSE indicated fairly high scores on a 7-point scale for both groups (intervention $M = 5.18$, $SD = .90$; control $M = 5.36$, $SD = .92$), with no significant differences. Participants were slightly more confident for independent job tasks, such as requesting an application ($M = 6.14$), working on their own ($M = 6.04$), and completing applications ($M = 5.88$). They reported least confidence with tasks requiring personal interaction, including interview skills ($M = 4.79$), disclosure of disability ($M = 4.77$), and oral presentation ($M = 4.94$).

Average assertiveness scores on the AJHS for the intervention group at pre-test was 102.65 ($SD = 18.11$), and 109.74 for the comparison group ($SD = 17.13$) out of 154. Participants rated themselves as most assertive in asking friends for job leads ($M = 6.06$), asking for more information about jobs ($M = 5.94$), and mentioning both unpaid and paid experience ($M = 5.90$). Participants were less assertive with bolder actions, such as asking employers if they knew other employers who might be hiring ($M = 2.90$) and asking for a second interview ($M = 4.06$).

Participants were fairly confident in their ability to adapt to new job situations (CAS) (intervention $M = 7.51$, $SD = 1.53$; comparison $M = 8.21$, $SD = 1.42$, on a 10-point scale with higher scores indicating greater career adaptability). Highest rated items related to control in the career process including items such as: career success is determined by effort ($M = 8.39$), and

ability to overcome career barriers ($M = 8.35$). Responses were fairly high on all items, with resiliency after disrupted career plans rated lowest ($M = 6.80$).

Post-test. Overall responses on the three measures administered at pre-test and post-test were significantly correlated with each other ($r > .28$; $p = .05$ or less for all). Group differences in change at post-test were examined using repeated measures MANOVA. Mentees showed improvement in all scales at post-test, whereas the comparison group was inconsistent (See Table 2 for means and standard deviations).

A factorial MANOVA was used to analyze group differences in changes from pre to post, resulting in a significant interaction by group (intervention, comparison) and time of test (pre-test, post-test), $F(3,42) = 3.41$, $p = .026$. Mentee assertiveness, measured by the AJHS, improved significantly more than those in the comparison group, with a significant interaction between group and time of test, $F(1,44) = 9.09$, $p = .004$, (See Table 2). Mentee scores on the AJHS improved by 12.39 points from pre to post-test, $t(22) = -3.61$, $p < .01$.

Employment Outcomes

Of the 47 participants who completed the post-test, 26 provided employment information. Of the 12 mentees, 7 were employed full-time (30 hours or more per week), and 5 were employed part-time. In the comparison group, 10 were employed full-time, and 4 were employed part-time. A Chi Square Test of Independence indicated no significant group differences, $X^2(2, N = 46) = 1.36$, $p = .51$. Several students ($n = 9$; 1 intervention, 8 comparison) were not eligible for full time employment at post-test because they failed to graduate during the study. Five students (4 intervention, 1 comparison) did not provide post-test graduation information.

Job Satisfaction Measures

A total of 26 participants (12 intervention, 14 comparison) were employed and completed job satisfaction measures at post-test. The AJDI and AJIG were administered using a 5-point scale with higher numbers indicating greater satisfaction. Four measures of job satisfaction (ADJI, AJIG, Job Fit, and Intention to Leave) were analyzed using MANOVA analysis for differences between groups. Participants generally indicated high job satisfaction, with no significant group differences on any of the measures, with all p values $>.3$ (See Table 3 for means and standard deviations).

Program Satisfaction

Participants completed a survey evaluating the program on a 10-point scale, with higher scores indicating greater satisfaction. Average ratings were at least 8 on most items including ratings for how beneficial the project is for blind college students and willingness to participate in a similar project again. Most mentees agreed that they would likely keep in touch with their mentor after the project ($M = 7.91$).

Discussion

We predicted that participating in a career mentoring relationship would significantly improve employment outcomes for legally blind college students, compared to those using traditional career preparation resources. Students working with mentors were significantly more assertive in job hunting and showed trends in improvement for job-seeking self-efficacy and career adaptability. However, despite these positive trends, the mentoring relationship did not have a significant influence on employment rates and job satisfaction.

Service providers, students, and parents have important knowledge to gain from these results. First, based on our recruitment experiences, we found that professionals and students in

the blindness community are highly interested in mentoring. The number of participants in this study underestimates the number of those interested given the narrow eligibility criteria. Mentors across the nation were eager to volunteer their time, and many college students expressed a desire to work with a mentor but were excluded from participating due to age or late graduation dates. The retention rate for this project was impressively high for a longitudinal study, indicating that students and mentors were invested. Additionally, participants evaluated the project as being beneficial and most planned to stay in contact with each other after the study.

Secondly, our results indicate that mentor relationships are effective in improving job-seeking assertiveness for legally blind college students. Trends indicated that improvement may also occur in areas of self-efficacy and career adaptability, and perhaps with a longer mentoring period significant gains would be seen in these areas as well. More research is needed to investigate the link between assertiveness and employment outcomes among this population.

Delayed graduation, an unanticipated issue that arose in this study, raises an important concern. Several students in this study lacked the ability to accurately predict when they would graduate. This is worth noting because students need to be prepared to provide potential employers with an accurate expected graduation date. Students with B/VI may need more assistance formulating realistic degree plans.

Limitations

As the first systematic, empirical study of the effectiveness of career mentoring for this population, the use of a two-group randomly controlled, longitudinal, experimental design maximizes internal validity. Yet, there are important limitations to consider. First, narrow criteria and a limited timeframe resulted in a small sample size that restricts our ability to appropriately interpret trends and generalize results. Second, several students who did not graduate during the

study were ineligible for employment at post-test. Conducting the study over a longer period of time would have allowed for broader eligibility criteria, higher rates of graduation within the timeframe, and more time for the mentoring relationship to prepare students for employment.

Future Directions

In addition to longer term mentoring with a larger sample, other research directions should be explored. We initially intended to match students with local mentors, which was not always possible. An investigation comparing the effectiveness of distance versus local mentoring may provide information on the critical components of mentorship needed to improve employment outcomes. Qualitative data was collected on quality of the mentoring relationships, activities, and job search strategies. Qualitative results will be presented in future work that may provide insight for students, mentors, and service providers on specific practices that may lead to greater employment success for this population.

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Table 1. Timeline for Study Implementation by Cohort.

Cohort	Expected Graduation	Orientation	Pre-Test	6-Month	Post-Test
1 (n =10)	APR 2012 to DEC 2012	JAN 2012	FEB 2012	JUL 2012	JAN 2013
2 (n = 12)	JAN 2013 to JUL 2013	AUG 2012	SEPT 2012	FEB 2013	AUG 2013
3 (n = 6)	AUG 2013 to MAR 2014	APR 2013	MAY 2013	OCT 2013	APR 2014
4 (n = 23)	APR 2014 to DEC 2014	JAN 2014	FEB 2014	JUL 2014	JAN 2015

Table 2. Pre- and Post-Test Scales: Means and Standard Deviations

Measure	Intervention		Comparison	
	Pre-Test	Post-Test	Pre-Test	Post-Test
Job-Seeking Self Efficacy	M = 5.18 SD = 0.90	M = 6.05 SD = 0.71	M = 5.36 SD = 0.92	M = 5.86 SD = 0.88
Assertive Job-Hunting Survey	M = 102.65 SD = 18.11	M = 115.04* SD = 14.52	M = 109.74 SD = 17.13	M = 106.30 SD = 24.78
Career Adaptability	M = 7.51 SD = 1.53	M = 8.01 SD = 1.74	M = 8.21 SD = 1.42	M = 8.26 SD = 1.37

*Significant change from pre-test to post-test at $p < .01$.

Table 3. Job Satisfaction Measures: Means and Standard Deviations.

	Intervention	Comparison
ADJI	M = 3.75 (SD = .58)	M = 3.70 (SD = .79)
AJIG	M = 4.18 (SD = .67)	M = 3.88 (SD = .91)
Job Fit	M = 8.00 (SD = 2.26)	M = 7.13 (SD = 2.34)
Intention to Leave	M = 3.44 (SD = 1.52)	M = 3.64 (SD = 1.93)