

**The Relationship between Vocational Rehabilitation Professionals' Interactions with
Businesses and Employment Outcomes for Consumers who are Blind or Visually Impaired**

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Abstract

The purpose of this study was to determine if there is an association between how VR counselors and business relations staff interact with employers and employment outcomes for consumers who are blind or visually impaired. To determine how VR professionals interact with employers, a survey was conducted that included measures of their use of the Business Relations Model (BRM) and of three blindness-specific techniques with businesses believed to be effective based on prior research. These measures were averaged across agencies and combined with RSA-911 data to determine their association with consumer employment outcomes, utilizing multilevel modeling. How staff reported interacting with employers was associated with the agency's employment outcomes for consumers. The more counselors reported they used practices consistent with the BRM approach, the more likely their agency's consumers were to achieve employment. The more business relations staff used the blindness-specific techniques, the more likely their agency's consumers were to achieve employment. Training in the areas of interacting with businesses (for counselors) and blindness and assistive technology (for business relations staff) would be beneficial for many people in these positions.

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Employment rates for people who are blind or visually impaired are currently, and have historically, been much lower than for the general population. In 2013 the employment-population ratio for people aged 16 to 64 that reported difficulty seeing was 30.8 compared to 67.4 for the general population (Bureau of Labor Statistics, 2014). In addition, the unemployment rate for this group was twice the level of the general population (14.9% versus 7.5%). Negative attitudes of employers have been identified as a major barrier to employment for people who are blind or visually impaired (McDonnall, Zhou, & Crudden, 2013; Crudden & McBroom, 1999; Crudden, Williams, McBroom, & Moore, 2002; Kirchner, Johnson, & Harkins, 1997; Salomone & Paige, 1984). This is a barrier identified by both people who are blind themselves and professionals who work with them.

Improving negative employer attitudes is a challenging problem. One potential avenue to address this barrier is through the interactions that state-federal vocational rehabilitation (VR) agencies have with employers. VR agency personnel have traditionally interacted with employers in an effort to help consumers obtain employment. The focus of these interactions and the frequency of their occurrence has varied considerably over time and across agencies. In the past decade, VR agency interactions with businesses have received more attention, with the emphasis on use of the Business Relations Model (BRM) approach. This approach focuses on targeted efforts by VR agencies at establishing long-term relationships with businesses that can result in many consumers being placed with that employer, over a long period of time (Anderson et al., 2006). It focuses on treating the business as a customer, just as the consumer with a disability is treated as a customer, and is also referred to as the dual customer approach.

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Although this approach is not new (e.g., Fry, 1999), it has garnered much more attention within VR agencies in recent years, at least partially influenced by CSAVR's establishment of a permanent position for a Director of Business Relations and their National Employment Team, which includes a representative from all 80 state VR agencies (K. West-Evans, personal communication, March 14, 2012).

The importance of business interactions for VR agencies is also supported by the Workforce Innovation and Opportunity Act of 2014 (WIOA). One of the significant changes made to the Rehabilitation Act with the authorization of WIOA is an increased focus on employer engagement, including increased opportunities for VR agencies to assist employers in providing work-based learning experiences for consumers and a requirement that VR agencies describe in their state plan how they will work with employers to identify competitive employment opportunities for their consumers (U.S. Department of Education, 2014). Emphasis on the importance of developing relationships with businesses is increasing for VR agencies, which appears to be a permanent change.

Despite the recent focus on business development and push for VR agencies to participate (Anderson et al., 2006), the effectiveness of these practices has generally not been evaluated by empirical research. The emphasis VR agencies place on these interactions with businesses varies considerably (Anderson et al., 2006). In addition, not all VR agencies have incorporated the BRM approach; some agencies continue to utilize more traditional job placement approaches to interact with employers. Only one study could be located that empirically evaluated the relationship between VR agency involvement with businesses and consumer outcomes: A GAO report (2007) documented that stronger relationships between VR agencies and the business community resulted in higher average earnings and higher rates of

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departure from disability rolls for SSA beneficiaries. The GAO study did not attempt to measure use of the BRM approach, rather it measured relationships with the business community by frequency of involvement in eight activities. No studies were located that empirically evaluated the effectiveness of the BRM approach.

Interactions with businesses are an important component of services that the VR agency can provide for consumers who are blind and visually impaired because they afford an opportunity to address employers' potential attitudinal barriers and negative misperceptions. Research regarding the best ways to interact with employers, to address the barrier of negative attitudes, is limited. Only one study that addressed this topic was identified; this study involved VR professionals, employers, and consumers providing suggestions for how to overcome the barrier of negative employer attitudes, as well as other employment barriers (Crudden et al., 2002; Crudden, Sansing, & Butler, 2005) Three important techniques to use when discussing employment of persons who are blind or visually impaired with employers were identified: (a) providing education about how people who are blind or visually impaired function on the job, (b) exposing businesses to employed people who are blind or visually impaired, and (c) providing referrals to other businesses that employ someone who is blind or visually impaired. The first technique identified, providing education about how people who are blind or visually impaired function on the job, is supported by research conducted with employers, who indicated it was very important to have information regarding how the blind or visually impaired applicant could work with equipment, record and retain information, and access printed and computer information (Kirchner et al., 1997). It is important to determine how VR agency professionals are actually interacting with businesses, and to evaluate the effectiveness of these practices on outcomes for consumers who are blind or visually impaired.

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Purpose of the Study

The purpose of the study was to determine if there is an association between how VR counselors and business relations staff (i.e., the generic name for VR agency professionals who have a primary role of working with businesses) interact with employers and employment outcomes for consumers who are blind or visually impaired. Specifically, we empirically evaluated the use of the BRM approach and the use of blindness-specific techniques with businesses, found to be important in previous research (Crudden et al., 2002; Crudden, Sansing, & Butler, 2005). We utilized survey data collected from VR agency professionals combined with RSA-911 agency consumer data to investigate the research questions. The specific research questions addressed in this study were:

1. Is use of the BRM approach by VR counselors associated with employment outcomes for consumers?
2. Is use of the BRM approach by business relations staff associated with employment outcomes for consumers?
3. Is use of blindness-specific techniques with businesses by VR counselors associated with employment outcomes for consumers?
4. Is use of blindness-specific techniques with businesses by business relations staff associated with employment outcomes for consumers?

Method

Measurement Development

Measures of VR personnel's use of BRM practices and of blindness-specific employer interaction practices were developed for this project as measures of these variables did not exist. A formal instrument development process was followed to create the BRM measure (referred to

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as the Business Relations Scale [BRS]), including item development based on the literature, expert review of items to support content validity, and psychometric analyses of the data. The measure of blindness-specific interaction practices (referred to as BSIP) was developed based on results of prior research indicating that the three items included on the scale are important elements of effective interaction practices when discussing employment of persons who are blind or visually impaired with employers (Crudden et al., 2002; Crudden et al., 2005). It should be noted that the three blindness-specific techniques are consistent with the BRM approach, but were separated from the other items due to being found to be important in previous research and being disability-specific (unlike the other items). These measures were the independent variables in the study.

Development of the BRM measure. Items were developed to measure the use of BRM practices by VR personnel based on literature regarding effective employer interaction practices (Anderson et al., 2006; Anderson, 2001; Fry, 1997; Graffam, Shinkfield, Smith, & Polzin, 2002; Luecking, Fabian, & Tilson, 2004; Luecking, 2008; Strensrud, 2007). The 20 items that were developed underwent review by an expert panel consisting of five business relations specialists from VR agencies. The panel members individually rated each item as to its relevance to the implementation of the BRM (rated as essential, important but not essential, not relevant, or contrary) (Lawshe, 1975). Items meant to represent the BRM for which at least 4 out of the 5 panel members rated “essential” were retained. Items not meant to represent the BRM (i.e., to be negatively scored on the scale) for which at least 3 out of the 5 panel members rated “contrary” were retained. This follows Lawshe’s (1975) assertion that when at least half of the panelists perceive the content of an item to be “essential” it has some degree of content validity. Based on these criteria, five items were removed from the scale.

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Pilot test. The revised version of the measure (which included the 15 BRM items and the 3 blindness-specific items together) was pilot tested with 14 VR agency staff members (counselors and business relations staff). Items on both measures were worded as statements to which the respondents were asked to provide their level of agreement on a 5-point Likert scale (*Strongly Agree* to *Strongly Disagree*). The measures were included as one component of a larger survey. Participants were asked to provide comments, suggestions, and report any problems experienced while completing the online survey. Participants did not report any problems with responding to the items or completing the survey; therefore the overall survey, including the two measures, was finalized. See Table 1 for a list of the items included on each scale.

Psychometric analyses. Because the BSIP was created to measure a formative construct rather than a reflective construct (i.e., the indicators or items determine the construct, rather than the construct determining the indicators), it was not subjected to traditional psychometric analyses (Bollen & Lennox, 1991; Petter, Straub, & Rai, 2007). Scores had a possible range of 0 to 12, with higher scores indicating greater use of the blindness-specific techniques. Use of the BRM is considered a reflective construct, and therefore its internal consistency and factor structure was evaluated. These analyses indicated that two items on the BRS clearly did not correlate with the other 13, and these items were removed to form the final scale. Chronbach's alpha with the 13 items was .84 and common factor analysis, utilizing an iterated principal factor extraction method and a promax rotation, supported a two factor solution for the scale, with items consistent with the BRM approach loading on one factor and items in disagreement with the BRM approach loading on another factor. Scores had a possible range of 0 to 52, with higher scores indicating greater use of the BRM approach.

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Data Collection and Participants

Staff from VR agencies in the United States, including the 50 states and Washington D.C., that serve the majority of consumers with visual impairments (i.e., combined agencies and blind agencies) were invited to participate in this study. Within each agency, business relations (BR) staff and counselors who were responsible for interactions with businesses were asked to complete the survey. The survey was administered online, with a request to complete it sent by email to appropriate VR staff. The request was distributed by VR agency directors to their staff (for recruitment of both counselors and BR staff) and by Kathleen West-Evan, Director of Business Relations, to the points of contact for the CSAVR National Employment Team within each agency (for recruitment of BR staff). A total of 245 VR personnel responded to the survey, with 206 providing responses to the measures used in this study. Because I was not solely responsible for distributing the survey and do not know how many people received a request to participate, it is not possible to report a response rate for the survey.

Data collected from the VR personnel survey was merged with data from the Rehabilitation Services Administration's case service report (RSA-911) for fiscal years 2010 and 2011. RSA-911 is public-use data that was obtained directly from RSA. It includes case service information (i.e., demographic, socioeconomic, disability, service, and outcomes) for each person whose case was closed during that fiscal year. This data was restricted to only include persons who (a) had a primary disability of blindness or visual impairment, (b) were served by one of the agencies for which staff data were available, (c) were not employed at the time of application, (d) were between the ages of 22 and 64 at application, and (e) were closed after receiving services with employment in an integrated setting or without employment. The sample was restricted to persons not employed with a business at application as the focus of the study

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was the effectiveness of business interaction practices; many persons employed at application would be trying to retain their positions with their current employers. As we were focusing on effectiveness of these practices in terms of developing business relationships, those with jobs at application were removed. Persons who were closed in extended employment, self-employment, the Business Enterprise Program, as a homemaker¹, or as an unpaid family worker were excluded for the same reason. Large differences were noted in terms of agency rate of employment outcomes (i.e., percentages of consumers closed successfully) based on whether the entire sample was used or this restricted sample was used. Therefore, it was considered important to restrict the sample to be most applicable to the research questions. Table 2 provides the specific consumer sample size available for each model.

Although 206 VR staff had scores available on the two measures, not all of the data were used in the analyses. Individual staff scores were used to create agency means to represent the agency staff's use of the BRM and use of blindness-specific interactions (agency level variables). Separate means were created based on staff position (VR counselor and business relations staff), resulting in four means to use in the analyses. Criteria for developing means for BR staff were: (a) at least one person provided a response (for those agencies who had only one or two BR staff employed) or (b) two or more people provided a response and at least 25% of the BR staff were represented. Criteria for means development for VR counselors were that two or more people provided a response *and* more than 10% of the VR counselors employed by the agency (who work with blind and visually impaired consumers) were represented. This resulted in 16 agencies with counselor means for FY 2010, 14 agencies with counselor means for FY 2011, and 17 agencies with BR staff means in FY 2010 and 2011. Two agencies were removed from the counselor analyses in FY 2011 due to reported changes in agency policy or practices regarding

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interactions with businesses. For the BR staff analyses, two agencies used in FY 2010 analyses were also removed in FY 2011, but two different agencies were included in FY 2011, again due to reported changes in agency policy or practices regarding interactions with businesses in those fiscal years. (Many agencies had begun to place a greater emphasis on business interactions; for example, some agencies reported hiring new BR staff in FY 2011. Because these changes may have influenced consumer outcomes beyond what individual staff were doing, agencies with changes were removed from the analyses.) Staff sample sizes, used to develop agency means, for each year were: (a) 104 counselors for FY 2010, (b) 93 counselors for FY 2011, (c) 80 BR staff for FY 2010, and (d) 73 BR staff for FY 2011.

Variables

The outcome variable was a dichotomous measure of employment at case closure (persons closed with a job were coded as “1” and those closed without a job were coded as “0”), which was measured at the individual level (level-1). The independent variables of interest were the two measures of staff use of the BRM and staff use of BSIP previously described; these were agency level (level-2) measures. A number of control variables at the individual level known to be related to employment outcomes of VR consumers were included in the models to account for their effects. These individual level control variables were receipt of SSI, receipt of SSDI, age at closure, gender, severity of disability (legally blind vs. visually impaired), presence of a secondary disability, education level (6-point scale ranging from less than high school [which was coded 0] to master’s degree or higher [which was coded 5]), and individual race/ethnicity variables (African American, Hispanic, Asian, and other race). A number of control variables at the agency/state level were also utilized in the analyses: the employment-population ratio, unemployment rate, and per capita income for the state. This state-level economic data was

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obtained from the Bureau of Labor Statistics website and the Bureau of Economic Analysis website for each year.

Statistical Analyses

Multilevel modeling was the statistical technique used, specifically a two-level hierarchical generalized linear model (HGLM) that allowed predictors at both the agency level and individual (consumer) level. Analyses were conducted with HLM6 using the logit link function and restricted PQL estimation. Unconditional models were calculated initially to document that employment outcomes do differ across agencies, followed by models with level-1 variables only. Then the four models (counselor model for FY 2010 and 2011, BR staff model for FY 2010 and 2011) with all control and level-2 predictor variables were run. Estimates are from unit-specific models.

Results

Descriptive Statistics

Means and standard deviations for all variables included in the four models are provided in Table 2. Average BR staff scores on the BRS were substantially higher than average counselor scores, which was anticipated given that BR staff spend more time working directly with businesses and are expected to have more expertise in this area. Variability was also lower for BR staff on the BRS compared to counselors. Interestingly, average BSIP scores were very similar across the groups.

Preliminary Models

Unconditional models do not include any predictor variables and are run initially to determine whether variability exists between level-2 units and the outcome of interest. In our case, the unconditional model determined whether consumer employment outcomes differ

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between agencies. Results indicated that there was statistically significant variability in consumer employment outcomes across agencies, which justified creating a multilevel model. Level-1 (consumer) variables were added to the models next to assess whether variability still existed between agencies once consumer variables were taken into account. Again, a significant amount of variability existed, and level-2 variables were added to the models in order to address the research questions.

VR Counselor Models

Statistical results of the final model for the two counselor models are provided in Table 3. In FY 2010, when both the BRS and BSIP measures were included in the model, neither variable reached statistical significance (BRS: $\gamma = 0.10$, $t(10) = 1.48$, $p = .17$; BSIP: $\gamma = -0.02$, $t(10) = -0.10$, $p = .92$). For counselors these variables were highly correlated ($r = .77$), introducing multicollinearity issues. The models were run for each variable separately (BRS as the only predictor and BSIP as the only predictor, retaining all control variables), and the BRS variable was significant while the BSIP variable was not. As BRS was clearly important and BSIP was not, the model with BRS only was used as the final model. In FY 2011 results were similar when both measures were included in the model (BRS: $\gamma = 0.10$, $t(8) = 1.83$, $p = .11$; BSIP: $\gamma = -0.09$, $t(8) = 0.69$, $p = .51$). The models were run for each variable separately again as the correlation between the two predictor variables was very high ($r = .76$). This time both variables were significant when the other was removed. Because the BRS measure had a stronger relationship with employment outcomes (BRS only: $\gamma = 0.12$, $t(9) = 3.41$, $p < .01$ vs. BSIP only: $\gamma = 0.26$, $t(9) = 2.86$, $p = .02$), this model is reported in Table 3.

The odds ratios reported in Table 3 represent the increase in odds of a positive employment outcome based on one higher point scored on the BRS scale. This can be translated

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to an odds ratio of 1.53 if the agency's VR counselors were one standard deviation above the mean (i.e., 4.22 points) on the BRS in FY 2010, which means an increase in odds of an employment outcome of 53%. In FY 2011, it can be translated to an odds ratio of 1.72, or an increase in odds of 72% of an employment outcome if the agency's VR counselors were one standard deviation above the mean on the BRS. The effect size of the reported odds ratios are considered small.

Business Relations Staff Models

Statistical results for the final model for the two BR staff models are provided in Table 4. The BRS and BSIP measures were not highly correlated for BR staff ($r = -.30$ and $r = .004$ in FY 2010 and 2011), therefore multicollinearity was not an issue. Results for BR staff were very consistent across the two years of data: in both years the BSIP measure was a significant predictor of consumer employment and the BRS measure was not. The odds ratios reported in Table 4 represent the increase in odds of a positive employment outcome based on one higher point scored on the BSIP scale. This can be translated to mean an increase in odds of an employment outcome of 40% for each standard deviation above the mean the agency's BR staff are on the BSIP scale in FY 2010 ($OR = 1.40$), and an increase in odds of 37% for each standard deviation above the mean the agency's BR staff are on the BSIP scale in FY 2011 ($OR = 1.37$). The size of these demonstrated effects is small.

Discussion

The results clearly support the importance of use of the BRM approach with businesses for VR counselors and of use of blindness-specific techniques with businesses for BR staff. There was also some support for the importance of blindness-specific techniques with businesses for VR counselors, although results were inconsistent across years. The most important factor for

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counselors was the general way they interacted with businesses: the more they reported approaching businesses as customers whose needs were to be considered (i.e., using the BRM approach), the more likely consumers served by the agency were closed into competitive employment. The two variables (BRS and BSIP) were highly correlated for counselors, which means that counselors who reported using more BRM approaches were more likely to also report using blindness-specific techniques with businesses.

Interestingly, for BR staff, use of the BRM was not related to consumer outcomes, but use of blindness-specific techniques was: the more BR staff reported using blindness-specific techniques when interacting with businesses, the more likely blind or visually impaired consumers served by the agency were closed into competitive employment. This is an important finding, given that some BR staff in combined agencies may not have adequate knowledge about consumers who are blind or visually impaired, as indicated by counselors working in combined agencies (McDonnall, 2014b). Blindness is a unique disability that requires unique alternative techniques and assistive technology (AT) to accommodate it. If BR staff are not informed about blindness and these alternative techniques and AT, they cannot inform employers about them, and they may not be aware themselves of the capabilities of blind individuals. VR professionals believe that employers have more negative views toward this population than people with other types of disabilities, and that negative attitudes of employers are a significant challenge to building relationships with them (McDonnall et al., 2013; McDonnall, 2014a). Even if employers are open to hiring people with disabilities, they may not be as open to hiring those who are blind, and BR staff must be in the position to assure them of the capabilities of people who are blind.

The two measures were not correlated in one year and had a small-to-medium *negative* correlation in the other year for BR staff. This indicates that BR staff's use of the BRM approach

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is not strongly associated with their use of blindness-specific techniques, as it was for counselors. Just because BR staff are utilizing the BRM approach does not mean they are using blindness-specific techniques with businesses, and in fact, in one year those who used more BRM techniques were less likely to use blindness-specific techniques. This is interesting because the BSIP techniques are considered to be good practice under the BRM approach, as discussed previously. This lack of a relationship may be associated with the fact that some BR staff do not discuss blind or visually impaired consumers with businesses, which is a problem that was discussed by counselors and administrators from combined agencies (McDonnall, 2014b).

Possibly contributing to the lack of a relationship between BR staff use of the BRM approach and consumer employment is the lower variability in this measure for BR staff – most scored highly on this scale, as might be expected given the nature of their position. Their average scores clustered near the top of the scale, and the score range was smaller than for counselors. As a group, BR staff scored significantly higher than counselors on the BRS. If most BR staff are approaching businesses from the same perspective, as a customer of the agency, BRS scores would not differentiate well between agencies.

The size of the effects found were small, yet still considered important. To find a relationship in a retrospective database study such as this, which includes VR staff survey data combined with consumer data, can be difficult, even when one exists, given the many factors that can influence consumer employment outcomes. The inability to match specific consumer outcomes to the counselors who worked with them adds to the difficulty. This type of direct match would offer greater potential to demonstrate a relationship between the variables. In addition, our data only represent a subset of all VR agencies serving consumers who are blind or visually impaired, and our data points most often do not represent the entire staff of the agency.

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To find clear relationships such as these, across years and with some different agencies included in the four models, indicates that this is a robust finding.

In analyses with administrator responses as to what is occurring at the agency level in regards to use of the BRM, there was little support for relationships between administrator reported agency-level BRM variables and consumer employment outcomes (McDonnall, 2014a). This indicates that how individual VR staff interact with employers is more important than agency policy on business interactions. Nine agencies that responded to our survey reported that they were changing or had recently changed how they handle interactions with businesses in an attempt to make their practices more consistent with the BRM approach. These findings are important for agencies who are attempting to move to the BRM approach: it will be necessary for counselors to actually implement the BRM approach on an individual level for the agency to have success. They are equally important for all agencies who have the goal of utilizing the BRM approach, and they indicate that agencies need to ensure that counselors understand and use this approach when working with businesses.

Implications

These results have several important implications for VR agencies. First, if the agency has a goal of utilizing the BRM approach, administrators need to be sure that counselors are actually implementing this approach when they interact with businesses. As agency administrators may be aware, many counselors are not comfortable with and/or do not feel knowledgeable about how to interact with businesses (McDonnall, 2014a). These counselors will require training on how to work with businesses, and it is recommended that this training be ongoing. BR staff who serve consumers with all disabilities (e.g., in combined agencies) could benefit from training about blindness, alternative techniques, and AT used by people who are

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blind. BR staff who come from a business background may enter the job with no knowledge about blindness, and when serving consumers with all disabilities, they may not receive much exposure to consumers with low-incidence disabilities such as blindness. A special effort should be made to educate BR staff, to enable them to use the blindness-specific techniques with businesses shown to be important in this study.

Further, when tracking the placement outcomes of BR staff, agencies should consider tracking placement of consumers who are blind or visually impaired separately from the total placement outcomes. Such tracking would allow agencies to identify which BR staff are most successful in placing consumers who are blind or visually impaired and provide an opportunity to identify those BR staff in need of additional training about blindness. Given that these blindness-specific techniques can be implemented with few additional resources beyond training time for staff, their implementation might present a cost effective method of improving agency competitive employment outcomes for this population.

An important implication for counselors is that how they interact with businesses (the approach that they use) does make a difference. Treating the business as a customer may result in more positive outcomes for their consumers, and can therefore be an effective component of the total service delivery provided to consumers. If counselors view these business interactions in that light, perhaps they will be more open to interacting with businesses. Counselors should also be encouraged to use the three blindness-specific techniques described in this study, as they were related to employment outcomes in one year and are considered to be consistent with the BRM approach. Implementing these blindness specific strategies means that counselors need to be able to articulate to employers how consumers who are blind or visually impaired use AT and perform routine job tasks, develop or maintain contact with employed consumers who can

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demonstrate their job skills, and participate in developing a pool of employers who can serve as references. However, these strategies can only be implemented if employer contact occurs. The importance of counselors engaging with employers should be stressed with new and veteran counselors.

Limitations

There are multiple limitations to this study that should be acknowledged. Some limitations have already been mentioned, such as the fact that the data did not allow a direct match between counselor response and their consumer outcomes. We did not have complete data on all counselors and BR staff in several agencies, therefore the averages only represent a portion of the VR personnel who provide services in the agencies. In addition, we did not have adequate data on all agencies to include them in the study, which resulted in a subsample of agencies used (between 27.5% and 33.3% of agencies were represented in the models). Certainly if data were available on all agencies and from all VR personnel within the agencies, the results might have been different. It is possible that the relationships exhibited would be much stronger, but also possible that the relationship could be eliminated with full data. We know that there are a multitude of factors that affect consumer employment outcomes, many of which could not be included in the model (e.g., consumer motivation and health issues, other agency-level differences). Also, the predictor variables were based on self-report data only and we do not know how well VR staff are actually performing the tasks (i.e., implementing the BRM approach).

Conclusions

This study represents the first attempt to empirically evaluate the effectiveness of the BRM approach with businesses on consumer employment outcomes. Results indicate that how

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staff reported interacting with employers was associated with the agency's employment outcomes for consumers. Consumers in agencies with rehabilitation counselors who use more BRM practices have significantly higher odds of being closed in competitive employment, while consumers in agencies with business relations staff who use more blindness-specific techniques with businesses have significantly higher odds of being closed in competitive employment. In a separate related study, little support was found for an association between what is done at an agency level in regards to employer interactions and employment of consumers who are blind or visually impaired (McDonnall, 2014a). These combined results indicate that staff interactions with business are more important in terms of employment for consumers than agency practices, or policy towards employer interactions. If the agency wants to utilize a BRM approach, it is important that rehabilitation counselors are actually implementing it. It is important that BR staff have an understanding of blindness/visual impairment in order to utilize the techniques identified as important. Training in the areas of interacting with businesses (for counselors) and blindness and AT (for BR staff) would be beneficial for many people in these positions, and may result in better outcomes for blind and visually impaired consumers of their agencies.

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Notes

¹ Analyses were also run with data that included homemakers as an unsuccessful closure, because some agencies are known to use a significant amount of homemaker closures with blind and visually impaired consumers. The results were essentially the same and the overall conclusions did not change.

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Table 1

BRS and BSIP Items

Measure	Item
BRS	Understanding the employment needs of the business is important.
BRS	I believe that working with businesses/employers is just as important as working with consumers to help consumers obtain employment.
BRS	I primarily interact with businesses/employers to develop a long-term relationship, with the goal of having multiple people hired.
BRS	Building trust with a business/potential employer is a primary goal of my interactions with them.
BRS	To help consumers obtain employment, my time is better spent working directly with consumers than interacting with businesses/employers.
BRS	When initially interacting with a business/potential employer, explaining the needs of the consumer is important.
BRS	A goal of my early interactions with businesses/employers is to learn about their staffing needs.
BRS	Interactions with businesses/employers should focus on discussing specific consumers rather than the needs of the business/employer.
BRS	Marketing the services the agency can provide to businesses/employers is a critical part of my job.
BRS	I try to understand the business/potential employer as a whole before suggesting consumers for employment.
BRS	If a former consumer who is successfully employed begins to have problems in the workplace, I respond quickly to help solve the problem.
BRS	Attending external business events (such as job fairs, chamber of commerce meetings, Rotary Club meetings) is a good way to begin developing a relationship with businesses/potential employers.
BRS	I clearly explain the services that I can provide and the benefits of these services to new businesses/potential employers that I interact with.
BSIP	Providing education about how people who are blind or visually impaired can function on the job is an important part of the interactions I have with businesses/potential employers.
BSIP	I try to expose businesses/potential employers to successfully employed people who are blind or visually impaired.
BSIP	Providing referrals to other businesses that employ someone who is blind or visually impaired is an important service that I offer to businesses/potential employers.

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Table 2

Means and Standard Deviations for Model Variables

Parameter	Rehabilitation Counselors		Business Relations Staff	
	FY 2010 (N = 2,414)	FY 2011 (N = 1,968)	FY 2010 (N = 2,598)	FY 2011 (N = 2,402)
Level 1 Variables				
Competitive employment	0.43 (0.50)	0.50 (0.50)	0.47 (0.50)	0.51 (0.50)
Age at closure	46.22 (11.34)	46.47 (11.37)	46.38 (11.43)	46.65 (11.52)
SSI receipt	0.20 (0.40)	0.19 (0.40)	0.21 (0.41)	0.21 (0.41)
SSDI receipt	0.37 (0.48)	0.36 (0.48)	0.35 (0.48)	0.36 (0.48)
Gender (male)	0.55 (0.50)	0.58 (0.49)	0.55 (0.50)	0.55 (0.50)
Education level	1.79 (1.43)	1.80 (1.44)	1.79 (1.44)	1.83 (1.47)
Legally blind	0.59 (0.49)	0.54 (0.50)	0.58 (0.49)	0.56 (0.50)
Secondary disability	0.43 (0.49)	0.43 (0.50)	0.42 (0.49)	0.43 (0.50)
African American	0.32 (0.47)	0.32 (0.47)	0.32 (0.47)	0.34 (0.48)
Asian	0.02 (0.12)	0.02 (0.13)	0.02 (0.12)	0.02 (0.12)
Other race	0.02 (0.14)	0.02 (0.13)	0.03 (0.16)	0.02 (0.15)
Hispanic	0.13 (0.33)	0.14 (0.34)	0.13 (0.34)	0.13 (0.34)
Parameter	FY 2010 (N = 16)	FY 2011 (N = 14)	FY 2010 (N = 17)	FY 2011 (N = 17)
Level 2 Variables				
BRS	37.75 (4.22)	37.90 (4.44)	45.93 (3.35)	45.62 (3.06)
BSIP	8.40 (1.38)	8.48 (1.43)	8.56 (2.09)	9.00 (1.42)
Employment-population ratio	58.91 (3.82)	58.31 (3.62)	59.00 (3.72)	59.42 (3.95)
Per capita income	37445.69 (5200.47)	38666.29 (5374.89)	38369.00 (5926.51)	40469.06 (6113.66)
Unemployment rate	8.99 (1.51)	8.64 (1.33)	9.01 (1.30)	8.18 (1.49)

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Table 3

Statistical Results for Rehabilitation Counselor Final Models

Parameter	FY 2010					FY 2011				
	Coefficient	SE	Odds Ratio	95% CI	p	Coefficient	SE	Odds Ratio	95% CI	p
Level 1 Variables										
Age at closure	-0.01	0.00	0.99	[0.98, 0.995]	<0.01	-0.01	0.00	0.99	[0.98, 0.996]	<0.01
SSI receipt	-0.59	0.12	0.56	[0.44, 0.71]	<0.01	-0.37	0.13	0.69	[0.54, 0.88]	<0.01
SSDI receipt	-0.08	0.10	0.92	[0.76, 1.12]	0.42	-0.09	0.10	0.92	[0.75, 1.12]	0.40
Gender (male)	0.16	0.09	1.17	[0.98, 1.39]	0.08	-0.05	0.10	0.95	[0.79, 1.15]	0.59
Education level	0.18	0.03	1.20	[1.12, 1.27]	<0.01	0.14	0.03	1.15	[1.07, 1.23]	<0.01
Legally blind	-0.18	0.10	0.84	[0.69, 1.01]	0.07	-0.46	0.10	0.63	[0.52, 0.78]	<0.01
Secondary disability	-0.51	0.09	0.60	[0.50, 0.72]	<0.01	-0.54	0.10	0.58	[0.48, 0.71]	<0.01
African American	-0.07	0.10	0.94	[0.76, 1.14]	0.52	0.03	0.11	1.03	[0.83, 1.28]	0.77
Asian	0.05	0.35	1.05	[0.52, 2.10]	0.89	0.19	0.40	1.21	[0.55, 2.63]	0.64
Other race	-0.57	0.34	0.57	[0.29, 1.11]	0.10	-0.03	0.36	0.97	[0.47, 1.98]	0.93
Hispanic	0.17	0.15	1.18	[0.88, 1.58]	0.27	0.14	0.16	1.15	[0.84, 1.57]	0.40
Level 2 Variables										
BRS	0.10	0.04	1.11	[1.00, 1.22]	0.04	0.12	0.04	1.13	[1.04, 1.23]	<0.01
Employment-population ratio	0.11	0.05	1.11	[1.00, 1.24]	0.05	0.03	0.04	1.03	[0.94, 1.14]	0.46
Per capita income	0.00	0.00	1.00	[1.00, 1.00]	0.48	0.00	0.00	1.00	[1.00, 1.00]	0.06
Unemployment rate	0.24	0.12	1.28	[0.99, 1.65]	0.06	0.11	0.11	1.11	[0.87, 1.43]	0.35

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Table 4

Statistical Results for Business Relations Staff Final Models

Parameter	FY 2010					FY 2011				
	Coefficient	SE	Odds Ratio	95% CI	p	Coefficient	SE	Odds Ratio	95% CI	p
Level 1 Variables										
Age at closure	-0.01	0.00	0.99	[0.98, 0.994]	<0.01	-0.01	0.00	0.99	[0.98, 0.99]	<0.01
SSI receipt	-0.55	0.11	0.58	[0.46, 0.72]	<0.01	-0.47	0.11	0.62	[0.50, 0.78]	<0.01
SSDI receipt	-0.31	0.10	0.73	[0.61, 0.89]	<0.01	-0.21	0.10	0.81	[0.68, 0.98]	0.03
Gender (male)	0.19	0.08	1.21	[1.03, 1.43]	0.02	-0.03	0.09	0.97	[0.82, 1.15]	0.74
Education level	0.20	0.03	1.22	[1.15, 1.30]	<0.01	0.11	0.03	1.12	[1.05, 1.19]	<0.01
Legally blind	-0.23	0.10	0.79	[0.65, 0.97]	0.02	-0.33	0.10	0.72	[0.59, 0.88]	<0.01
Secondary disability	-0.50	0.09	0.61	[0.51, 0.72]	<0.01	-0.42	0.09	0.66	[0.55, 0.79]	<0.01
African American	-0.14	0.10	0.87	[0.72, 1.06]	0.17	-0.01	0.10	0.99	[0.81, 1.20]	0.89
Asian	0.06	0.35	1.06	[0.54, 2.11]	0.86	0.33	0.35	1.39	[0.70, 2.77]	0.35
Other race	-0.50	0.27	0.61	[0.36, 1.04]	0.07	-0.18	0.29	0.83	[0.47, 1.47]	0.53
Hispanic	0.19	0.14	1.21	[0.92, 1.59]	0.18	0.05	0.15	1.05	[0.79, 1.39]	0.75
Level 2 Variables										
BRS	0.04	0.05	1.04	[0.94, 1.16]	0.40	0.03	0.05	1.03	[0.94, 1.14]	0.49
BSIP	0.16	0.07	1.18	[1.01, 1.37]	0.04	0.22	0.10	1.25	[1.01, 1.54]	0.045
Employment-population ratio	-0.02	0.05	0.98	[0.88, 1.10]	0.69	-0.07	0.05	0.93	[0.83, 1.04]	0.19
Per capita income	0.00	0.00	1.00	[1.00, 1.00]	0.52	0.00	0.00	1.00	[1.00, 1.00]	0.94
Unemployment rate	0.02	0.14	1.02	[0.76, 1.37]	0.89	-0.01	0.12	0.99	[0.76, 1.29]	0.92