Journal of Vocational Rehabilitation 44 (2016) 175–189
DOI:10.3233/JVR-150789
IOS Press

Vocational rehabilitation services and employment for SSDI beneficiaries with visual impairments

J. Martin Giesen* and Anne Hierholzer
The National Research and Training Center on Blindness and Low Vision, Mississippi State University, Mississippi State, MS, USA

Received March 2015/Accepted April 2015

Abstract.
BACKGROUND: A considerable proportion of Vocational Rehabilitation (VR) consumers with visual impairments are Social Security Disability Insurance (SSDI) beneficiaries. The consumer and the effectiveness of VR and the Social Security Administration can benefit from greater understanding of the processes leading to improved employment outcomes for this population.
OBJECTIVE: Our purpose was to investigate service patterns and evaluate the impact of VR services on competitive employment outcomes for consumers with visual impairments who also are SSDI beneficiaries.
METHODS: Using FY 2011 RSA-911 data on 3,610 consumers who received SSDI, closed after receiving services, we conducted descriptive, factor analytic, and multilevel analyses to determine service patterns and what services predicted competitive employment.
RESULTS: We found service groupings related to special and remedial services, job-related services, evaluation, and training and supports. Job placement, job search, on-the-job supports, on-the-job training, counseling and guidance, rehabilitation technology, other services, and maintenance were positively related to competitive employment, but reader services, interpreter services, job readiness training, augmentative skills training, and assessment were negatively related to employment.
CONCLUSIONS: Pattern groupings of services suggest a systematic, holistic approach in VR. A new perspective is needed when examining the service-outcome relationship. Services positively related to competitive employment can have direct, direct-assistive, or indirect effects. Services negatively related to employment can be viewed as risk indicators.

Keywords: Blind, visual impairment, services, competitive employment, vocational rehabilitation, SSDI, Social Security Disability Insurance

1. Introduction

Services and their impact on employment outcomes are clearly key elements in the state-federal Vocational Rehabilitation (VR) program. Services must be directed toward achieving the *employment goal* of an individual consumer. The employment goal must be based on the strengths, resources, priorities, concerns, abilities, and capabilities (termed "primary employment factors") of the consumer. In addition, the individual's interests and informed choice must also be reflected throughout the VR process – including in development of the employment goal, in the selection of planned services to achieve the goal, and in the Individualized Plan for Employment (IPE). These factors were specifically addressed in policy directives released when Fredrick K. Schroeder was Commissioner of the

*Address for correspondence: J. Martin Giesen, NRTC on Blindness and Low Vision, PO Box 6189, Mississippi State University, Mississippi State, MS 39762, USA. Fax: +1 662 325 8989; E-mail: jmg1@msstate.edu.

1052-2263/16/$35.00 © 2016 – IOS Press and the authors. All rights reserved

Rehabilitation Services Administration (RSA) (RSA Commissioner, 1997; RSA Commissioner, 2001). Recent VR policy communications continue to emphasize informed choice and individualization of employment goals in the development of the IPE (e.g., RSA Commissioner, 2014). In this context, the present research investigated patterns in service delivery and how services are related to employment outcomes in VR.

1.1. Social Security Administration and VR

Overseen by the Social Security Administration (SSA), the federal Social Security Disability Insurance (SSDI) program provides payments to Americans with disabilities who are unable to work. SSDI payments are based on previous levels of work experience, rather than on financial need. Annual proposed costs for SSA programs totaled $896 billion for FY 2015, representing the largest single program expenditure in the $3.9 trillion federal budget (OMB, 2015). Over the years, costs associated with SSA programs have been rising, prompting interest in controlling expenditures. One way to reduce costs is by increasing the number of SSDI beneficiaries who leave the rolls and return to work, which results in savings through suspended and then discontinued payouts. By encouraging and enabling recipients to go back to work, policymakers hope to boost the long-term solvency of the SSDI program.

Many SSDI beneficiaries also receive services in the VR program. In FY 2011, 33.9% of legally blind consumers who received VR services were also SSDI recipients at the time of application (Giesen, 2014). VR agencies provide a wide range of services to consumers, from assistance with education costs to job skills training. With a mission to assist individuals with disabilities to prepare for, secure, and maintain employment, VR agencies have a clear stake in greater understanding and utilization of factors that can facilitate successful employment outcomes for their consumers.

Because so many consumers of VR services also are SSDI beneficiaries, it is mutually beneficial for the effectiveness of both agencies, as well as to VR consumers, to improve understanding of what factors and service patterns affect employment outcomes. To date, SSDI beneficiaries with blindness and low vision have received little attention from researchers. Additional research is needed to explore the employment outcomes of VR consumers with blindness or low vision who are also SSDI beneficiaries. Thus, our specific research focus is on individuals who are (a) VR consumers, (b) blind or visually impaired, and (c) SSDI beneficiaries, with emphasis on how the full range of services received by this population relates to their employment outcomes.

1.2. Previous research

A summary review of investigations examining correlates or predictors of employment outcomes for consumers receiving VR services and who are also SSDI and/or Social Security Insurance (SSI) beneficiaries was provided by Giesen and Cavenaugh (2013). The present review emphasizes influences on employment outcomes from VR services and includes recent research focusing more exclusively on the role of VR services.

1.2.1. General disabilities – SSDI and SSI beneficiaries

Several studies have examined correlates or predictors of employment after VR for SSDI and SSI beneficiary populations of all disability types. These investigations differed in design, subpopulation focus, and type of SSA program benefit (Barry & Caplan, 2010; Hennessey, 1997; Hennessey & Muller, 1995; Rogers, Bishop, & Crystal, 2005).

Examining adult SSDI beneficiaries with a range of disabilities, Hennessey and Muller (1995) used data from a 10-year follow-up of interviewees in the New Beneficiary Followup (NBF) Survey in 1982 to examine the effect of VR services (controlling for demographic factors) on work outcomes. Respondents self-reported on VR services received in five broad categories. Services including physical therapy, job or vocational training, job placement, general education, and assistance in job placement, but not job counseling were positively associated with tendency to go back to work. Job placement had by far the largest effect but was reported as having been received by a very small segment – about 2% – of the beneficiaries. Though job placement was viewed as directly connected to getting a job, the authors suggested a "near tautological" relation of this service to work, apparently recognizing the existing high level of job readiness of those ready to receive job placement services.

A second study by Hennessey (1997), which also utilized long-term follow-up NBF survey data of adult SSDI beneficiaries with a wide range of disabilities, examined the same five broad VR service categories and their effect on ability to *sustain*

employment over time. Just two of the VR services, physical therapy and job placement services, had a statistically significant impact on the tendency to stop working. Individuals who received physical therapy were more likely to start and less likely to stop work, although this effect diminished after about five years on the job. The authors suggest that these recipients experience a "screening process" in VR that picks those who are more likely to exhibit potential for medical improvement, have less severe impairments, and thus are more likely to sustain work. Job placement services helped recipients begin work, but those who received these services were found to be more likely to stop working over the course of time, perhaps being less self-motivated than those who found a job without the help of job placement.

Rogers, Crystal, and Bishop (2005) examined the relationship between VR services and outcome ("rehabilitated" vs. not) for individuals of all disability types who were either SSI or SSDI recipients. They found that five VR services (job placement, on-the-job training (OJT), restoration, miscellaneous training, and other services) were positively associated with successful closure, but college or university training was negatively associated. As with Hennessey and Muller (1995), job placement had the largest effect.

In a study of transition-age youth of all disability types who were SSI recipients, Berry and Caplan (2010) examined four VR services, supported employment closure, and other factors that influenced two-year post-VR employment and earnings growth after 5 years of sustained employment. In contrast to previous positive findings (Hennessey & Muller, 1995; Rogers et al., 2005) for job placement on initial employment, Berry and Caplan paradoxically found that VR job placement services decreased odds of employment (based on reported income) two years after VR exit. Also, complex effects were found for college or university training. Receipt of this service decreased employment odds two years after VR, but those who received college training and maintained a job saw greater and more consistent levels of earnings over time and were suggested to have heightened potential for moving away from SSI cash benefits.

1.2.2. Disability-specific research

Two studies are included here because they investigated the impact of a wide range of services on VR employment outcomes, although they focused on specific disability groups *other than* blind or visually impaired. Also, these studies were not limited to, but did include, SSA beneficiaries.

Chiu, Chan, Bishop, Cardoso, and O'Neill (2013) examined whether 15 different VR services were predictors of competitive employment among VR consumers with *multiple sclerosis* (MS). Their sample included SSDI (46.6%) and SSI (12.1%) beneficiaries, but results were not broken out by SSA beneficiary type. Findings were limited because services received by less than 5% of the sample were not included. Using a very similar design, Sung, Muller, Jones, and Chan (2014) examined service and VR outcomes for adults with *epilepsy*. Again, SSI (21%) and SSDI (18%) beneficiaries were included but SSA beneficiary-specific results were not broken out. In both studies, negative service-outcome associations were minimally discussed.

1.2.2.1. Blindness and visual impairment research.

Findings for factors affecting VR employment outcomes for adults (including SSDI and SSI beneficiaries) who are blind or visually impaired are based on multiple investigations spanning more than three decades. These are summarized by Giesen and Cavenaugh (2012) and Capella-McDonnall (2005). Demographic, disability, socioeconomic, and work-history factors were found to influence employment outcomes in generally expected ways. Services including physical restoration, college training, OJT, and disability-related skills training were associated with improved employment outcomes. Also, only education-related services that resulted in a specific educational certificate or degree were related to competitive employment (Capella-McDonnall). Receipt of SSA benefits (SSDI, SSI) generally has been a risk (negative) factor.

Only one recent investigation (Giesen & Cavenaugh, 2013) has examined factors impacting VR employment outcomes specifically for SSDI beneficiaries with visual impairments. Giesen and Cavenaugh focused both on individual-level influences including demographic, socioeconomic status, and disability-related factors; and on state/agency-level influences related to economics and agency structure. Competitive employment was related to unemployment rate, gender, age, race, additional disability, severity of visual impairment, education, prior earnings, SSDI amount, and agency structure through interactive effects. The prior work experience of SSDI beneficiaries was interpreted as advantageous for achieving competitive employment.

1.3. Research objectives

In addition to the benefits to SSA of contributing to the effectiveness of the VR program for SSDI beneficiaries who are blind or visually impaired (B/VI), our research had additional objectives. First was to explore how services are delivered, looking to identify any patterns. We wanted to look for clusters or grouping of services that may or may not suggest systematization in service selection and delivery. A second objective was to investigate how services, either in groups or individually, relate to competitive employment outcomes. A refinement of our second objective was to investigate these service-to-outcome relationships while controlling for nonservice influences on employment. These influences included individual consumer-level (demographic, socioeconomic, and disability) factors and state- or agency-level (economic and agency structure) factors. We employed multilevel modeling to accomplish this. Knowledge of how services are combined plus how services relate to employment outcomes – above and beyond the impacts of nonservice factors – can help complete the picture of factors influencing employment outcomes and serve as a basis for policy and practice recommendations to help optimize the effectiveness of the VR program.

2. Method

2.1. Data source

The RSA Case Service Report (RSA-911) for FY 2011 was the data source. This annual national source provides socioeconomic, demographic, and disability information at referral, and service and outcome information for all cases closed each fiscal year. Cases selected were legally blind or had other visual impairments, were SSDI beneficiaries only (no SSI) at application, had received services (closed with or without a VR employment outcome), were age 18 to 75 at application, and received services in a blind or combined agency. Consumers living in the Territories were excluded ($N = 3{,}610$).

2.1.1. Characteristics of sample

Average age at application was 47.3 ($SE = 0.187$), and 45.2% were female. For race/ethnicity, 65.2% were White, 24.4% African American, 0.8% American Indian, 1.2% Asian American, 0.3% Hawaiian or Pacific Islander, 7.2% Hispanic of any race, and 0.9% multiple race. For disabilities, 73.1% were blind (vs. VI, not legally blind), 2.5% had a cognitive secondary disability, and 39.6% had a noncognitive secondary disability. For earnings and supports, 26.6% had weekly earnings at application ($M = \$80$, $SE = \$3$), and for monthly SSDI, $M = \$1{,}009$ ($SE = \$7$).

2.2. Overview of analysis strategy

Our analysis strategy followed our research objectives. Our first objective of investigating service delivery patterns was approached by a factor analysis of services. Our second goal of relating services to competitive employment outcomes was accomplished in two stages. First, the service factors derived from the factor analysis of services were employed in a model to predict outcome. Second, service variables within each factor were examined individually in a model to predict outcome. The refinement of our second set of analyses was to conduct these analyses by including extensive nonservice control variables in a multilevel analytic framework.

2.3. Analysis variables

2.3.1. Competitive employment defined

Our dichotomous criterion measure was an indicator of competitive employment after VR services and was coded (1) for a competitive employment outcome and (0) for a noncompetitive employment closure or *unsuccessful closures*. Competitive employment followed the RSA definition. It included employment in an integrated setting, self-employment, Business Enterprise Program (BEP) employment, and supported employment in an integrated setting; and was full or part-time, and compensated at the maximum of the State or Federal minimum wage (RSA Case Service Report, 2008). Noncompetitive employment included those who received services and were closed as homemaker, unpaid family worker, or those not meeting the above income criterion. Also included were *unsuccessful* closures – those closed *after services* in extended employment and those *not employed after services* who exited without an employment outcome.

2.3.2. Service measures

The 22 available services are listed in Table 1. Each of these was coded (1-0) as an indicator of receipt. These services were used as predictors of outcome in subsequent analyses.

Table 1
Proportions and standard errors for predictors by outcome group

Predictor	Outcome Groups: Noncompetitive & Unsuccessful $n = 1,971$	Competitive $n = 1,639$	Total Sample $N = 3,610$
Factors			
Special & remedial services (*M*)	0.132	0.124	0.129
	0.009	0.010	0.007
Job-related services (*M*)	0.482	0.890	0.667
	0.020	0.029	0.017
Evaluation (*M*)	1.847	1.879	1.862
	0.022	0.025	0.017
Training and supports (*M*)	2.275	2.407	2.335
	0.035	0.038	0.026
Individual Predictors			
Assessment	0.773	0.709	0.744
	0.009	0.011	0.007
Diagnosis and treatment of impairments	0.502	0.494	0.498
	0.011	0.012	0.008
Vocational rehabilitation counseling and guidance	0.704	0.747	0.724
	0.010	0.011	0.007
College or university training	0.088	0.083	0.086
	0.006	0.007	0.005
Occupational or vocational training	0.137	0.139	0.138
	0.008	0.009	0.006
On-the-job training	0.021	0.065	0.041
	0.003	0.006	0.003
Basic academic remedial or literacy training	0.011	0.013	0.012
	0.002	0.003	0.002
Job readiness training	0.137	0.135	0.136
	0.008	0.008	0.006
Disability-related skills training	0.439	0.392	0.418
	0.011	0.012	0.008
Miscellaneous training	0.211	0.207	0.209
	0.009	0.010	0.007
Job search assistance	0.145	0.235	0.186
	0.008	0.010	0.006
Job placement assistance	0.131	0.256	0.188
	0.008	0.011	0.007
On-the-job supports	0.048	0.198	0.116
	0.005	0.010	0.005
Transportation	0.386	0.358	0.373
	0.011	0.012	0.008
Maintenance	0.150	0.200	0.172
	0.008	0.010	0.006
Rehabilitation technology	0.541	0.682	0.605
	0.011	0.012	0.008
Reader services	0.023	0.019	0.021
	0.003	0.003	0.002
Interpreter services	0.006	0.004	0.005
	0.002	0.001	0.001
Personal attendant services	0.005	0.005	0.005
	0.002	0.002	0.001
Technical assistance services	0.090	0.145	0.115
	0.006	0.009	0.005
Information and referral services	0.281	0.278	0.279
	0.010	0.011	0.007
Other services	0.411	0.430	0.420
	0.011	0.012	0.008

Note. All measures are at application. *SE*s are given below each proportion or mean. Entries for Factors are means.

2.3.3. Control variables

Individual level (level-1) control variables were demographic, socioeconomic, and disability-related. These included gender, age at application, race and ethnicity (seven categories), presence of cognitive and noncognitive secondary disability, legal blindness (versus visually impaired, not legally blind), education level, weekly earnings, and SSDI income (at application). State or agency (level-2) control variables were state unemployment rate (Bureau of Labor Statistics, 2012), per capita income (U. S. Census Bureau, 2012), state population (U. S. Census Bureau, 2013), and agency structure type[1]. Agency structure was coded (1) for blind agencies versus (0) for combined agencies. (General agencies were excluded.) Control variables were selected based on previous research (e.g., Darensbourg, 2013; Giesen & Cavenaugh, 2013; U.S. Government Accountability Office [GAO], 2007).

2.4. Analyses

2.4.1. Analysis I: Service variable factoring

To investigate any pattern of provision of services, we followed the strategy of Giesen and D'Amato (1992) who identified dimensions (clusters) of service delivery to VR consumers and related those dimensions to employment outcomes. We expected and found correlations in patterns of service receipt. However, due to indicator coding of services, the correlation matrix computed during factor analysis consisted of phi coefficients. Because of concerns related to assumption violation in use of phi correlations (e.g., Parry & McArdle, 1991), we used the tetrachoric correlation matrix computed by PRELIS 2.80 (Jöreskog & Sörbom, 2006). This matrix was input for IBM SPSS Statistics 21 for conduct of an exploratory factor analysis using principal axis factoring and Oblimin rotation.

Because factor scores are not available with correlation matrix input, we created factor sums from the variables having loading of 0.37 or greater on each factor. These factor sums were then used in subsequent analyses.

[1] Combined state agencies serve all disabilities. In states with a separate agency structure, the general agency serves mostly consumers with disabilities other than visual impairments, whereas the blind agency serves visually impaired consumers.

2.4.2. Analysis II: Service factor – employment outcome model

Because we had explanatory variables (controls and focal predictors) at both individual consumer and state/agency levels and a dichotomous criterion measure, we employed multilevel logistic regression (two-level hierarchical generalized linear model [HGLM]). We used HLM6 6.08 (Raudenbush, Bryk, & Cogdon, 2010) using the logit link function and full PQL estimation.

We employed a modified sequential variable entry approach with guidance from Heck, Thomas, and Tabata (2012). First, we calculated an unconditional two-level model. We then entered the four state/agency level control predictors of the intercept to examine if these measures could account for some of the variation in odds of employment between agencies. Next, all level-1 controls were entered as a block. (All continuous controls or predictors at either level were centered at their grand mean). Then, the focal predictors for Analysis II – the four service factor scores – were added along with cross-level interaction terms for each service factor predictor with each state-level control. Finally, nonsignificant ($p > 0.10$) cross-level interaction terms were deleted in the final model. No difficulties regarding multicollinearity among all controls and predictors were present.

2.4.3. Analysis III: Individual services – employment model

Consistent with our second objective, we wanted to enhance our understanding of what was happening within the service factors at the individual-service level. To accomplish this we conducted another logistic HGLM analysis using the individual services indicators as focal predictors instead of the service factors. All control variables at both levels were the same, as was the variable entry progression. Nonsignificant service variables were dropped, and no cross-level interactions were investigated. This analysis was intended to reveal which specific services were "driving" each of the factor relationships with competitive employment outcome.

3. Results

3.1. Descriptive statistics

Univariate statistics for service factor sums and individual services are shown in Table 1 by outcome

categories and for the total sample. The base competitive employment rate for the current sample was 45.4%.

It is noteworthy that the overall mean for the Special and Remedial services factor was 0.129 indicating that the rate of receipt of services in this factor was quite low. In addition, examination of the frequency distribution (not shown) indicated that 98% of the sample received none or only one of these services. Noteworthy low rates of receipt also were observed for college, OJT, remedial training, and reader, interpreter, and personal attendant services.

3.2. Results of analysis I (factoring)

A four-factor final solution was indicated based on eigenvalue, scree test, and interpretability criteria, with 51% variance explained. One service, diagnosis and treatment of impairments, was excluded from the final factor solution due to an extremely low communality.

These factors were obtained. *Factor (F)1, Special & Remedial Services,* included reader, personal attendant, and interpreter services; basic academic remedial or literacy training ("remedial services"), and college or university training. (Range of loadings: 0.61–0.91.) *F2, Job-Related Services,* included job placement assistance, job search assistance, on-the-job supports, job readiness training, and OJT. (Range of loadings: 0.52–0.89.) *F3, Evaluation,* included information and referral services, VR counseling and guidance, technical assistance services, and assessment. (Range of loadings: 0.39–0.82.) *F4, Training and Supports,* included rehabilitation technology, other services, transportation services, maintenance, occupational/vocational training, miscellaneous training, and disability related augmentative skills training. (Range of loadings: 0.38–0.74.)

3.3. Analysis II: Service factor – employment model

Significant results for the hierarchical logistic regression models are given in the text. All estimates were from the unit-specific model.

3.3.1. Unconditional model

The 2 level model with no predictors (unconditional) yielded a marginally significant intercept with odds of competitive employment $OR = 0.857$, $p = 0.095$, estimating SSDI consumers have about 14% lower odds of competitive employment than noncompetitive employment within an average agency. This corresponds to baseline probability estimate of competitive employment of 0.43. The state-level (level-2) estimated intercept variance component was 0.306, $\chi^2(50) = 293.98$, $p < 0.001$, indicated that there was significant variability in likelihood of competitive closure across state agencies. This supported the development of a multilevel model.

3.3.2. Final model

All service factors, all non-service controls, and state or agency (level-2) control variables were included in this model.

3.3.2.1. F1, Special and remedial services. Receiving more services of the type in this factor was associated with declining odds of competitive employment, $t\ (3577) = -1.99$, $p = 0.047$, $OR = 0.82$. For each additional special or remedial service received, the odds of competitive employment decreased by 18%. (All odds ratios are to be interpreted for the specific predictor while "controlling for" or holding constant all other predictors in the model.)

3.3.2.2. F2, Job-related services. Receiving more job-related services was associated with increasing odds of competitive employment, $t\ (3577) = 9.48$, $p < 0.001$, $OR = 1.87$. For each additional job-related service received, the odds of competitive employment increased by 87%.

In addition (and found for this factor only), two cross-level interactions showed moderation of this effect by state unemployment rate and per capita income. There was a significant increase in the relationship between job-related services and competitive outcome (slope) as state unemployment rate increased, $t\ (3577) = 2.60$, $p < 0.009$, $OR = 1.08$. This increase in slope suggests that job-related services are even more important for achieving competitive employment when the state unemployment rate is higher. Further, there was a significant increase in the job services-competitive outcome relationship as state per capita income increased, $t\ (3577) = 2.60$, $p < 0.009$, $OR = 1.037$ (adjusted to $1,000 increments). This increase in slope suggests that job-related services are even more important for employment in states with higher per capita income.

3.3.2.3. F3, Evaluation. Receiving more evaluation services was not associated with likelihood of competitive employment, $p = 0.56$.

3.3.2.4. F4, Training and supports. Receiving more services related to training and supports was associated with increased odds of competitive employment, $t\,(3577) = 3.52$, $p = 0.001$, $OR = 1.10$. For each additional service related to training and supports, the odds of competitive employment increased by 10%.

3.4. Analysis III: Individual services – employment model

This analysis examined the relationships between individual services and competitive outcome and is organized within the framework of the four factors. The results are summarized in Table 2.

3.4.1. Special and remedial services

It is not surprising that F1, Special and Remedial Services, was only marginally related to outcome in Analysis II because only two of the five specific services were significantly related to competitive outcome. Reader services and interpreter services were the only specific services in this cluster that had a statistically significant relationship with outcome, and the relationship was negative for both.

3.4.1.1. Reader services. The OR of 0.55 indicates that a consumer receiving reader services has a 45% lower odds of competitive employment than a consumer not receiving these services, while controlling for all other service factors and control variables in the analysis model. Reader services are for individuals who cannot read print because of blindness or other disability factors. They may include reading aloud, transcription into Braille or sound recordings.

3.4.1.2. Interpreter services. A consumer receiving this set of services has a 70% lower odds of competitive employment than an individual not receiving these services, all other factors controlled. These services include sign language or oral interpretation (excluding language interpretation) and generally are for individuals who have a hearing impairment or who are deaf-blind. None of the other services in this factor group were significantly related to competitive employment.

3.4.2. Job-related services

Services in this factor group were all nominally related to job preparation or acquisition. The first three services in the list (Table 2) are job-related services meant to assist a job-ready individual in finding or being placed in employment, or being supported in attained employment. All were significantly related to outcome, but one service – job readiness training – was negatively related.

3.4.2.1. Job placement assistance. This service essentially is defined as a referral for a job interview. Receiving this service increases the odds of competitive employment by 130%.

3.4.2.2. Job search assistance. This service involves assistance in identifying appropriate jobs, resume preparation, developing interview skills, contacting employers, and the like. The odds of competitive employment are increased by 78% for individuals who receive this set of services.

3.4.2.3. On-the-job supports. The individual has been placed in employment and receives services to stabilize the placement and improve job retention. Receipt was associated with a 306% increase in odds of competitive employment.

3.4.2.4. On-the-job training (OJT). OJT generally involves paid training in specific job skills, on-site, by a possible employer; apprenticeships are included. Recipients have 100% greater odds of competitive employment than nonrecipients.

3.4.2.5. Job readiness training. This training involves basic elements for the world of work, including appropriate work behaviors, timeliness, and dress and grooming. Recipients have a 34% lower odds of competitive employment than nonrecipients.

3.4.3. Evaluation services

Only two of the four services in this factor group were related to outcome (Table 2); VR counseling and guidance was positively related to competitive employment but assessment was negatively related.

3.4.3.1. VR counseling and guidance. These discrete therapeutic services include attention in an a wide array of areas – from specific personal adjustment to family or social issues – all related to the needs of an individual with a disability to achieve an employment outcome. Persons receiving this service have 32% higher odds of competitive employment than those not receiving the service.

Table 2
Relationships of service factors and services with competitive employment

Factor or Service	*p*	Odds Ratio Relationship	
		Positive	Negative
Special & Remedial Services	0.047		0.82
Reader services	0.035		0.55
Personal attendant services	*ns*		
Interpreter services	0.045		0.30
Basic academic remedial or literacy training	*ns*		
College or university training	*ns*		
Job-Related Services	<0.001	1.87	
Job placement assistance	<0.001	2.30	
Job search assistance	<0.001	1.78	
On-the-job supports	<0.001	4.06	
Job readiness training	0.003		0.66
On-the-job training	0.002	2.00	
Evaluation	0.556		
Information and referral services	*ns*		
Vocational rehabilitation counseling and guidance	0.024	1.32	
Technical assistance services	*ns*		
Assessment	<0.001		0.66
Training & Supports	0.001	1.10	
Rehabilitation technology	<0.001	2.05	
Other services	0.082	1.18	
Transportation	*ns*		
Maintenance	0.009	1.35	
Occupational or vocational training	*ns*		
Miscellaneous training	*ns*		
Disability-related skills training	<0.001		0.70

Note. Diagnosis & treatment of impairment was not related to outcome, $p = 0.30$.

3.4.3.2. Assessment. These services are undertaken to determine eligibility for VR services and/or to determine the quality and quantity of VR services to be included in the IPE. Individuals receiving assessment services have a 34% lower odds of competitive employment than those not receiving this set of services. Information and referral services and technical assistance services were not significantly related to outcome.

3.4.4. Training and supports

Four out of seven services in this factor were significantly related to employment outcome, and one of the four was negatively related. The significant services involved technology, support, and specialized skills training.

3.4.4.1. Rehabilitation technology. Rehabilitation technology is a broad category of service that includes technology and devices and/or services to assist the individual in meeting needs and overcoming barriers in multiple areas, such as education, rehabilitation, employment, transportation, independent living, and recreation. Consumers receiving this service had 105% greater odds of competitive employment than those not receiving the service.

3.4.4.2. Other services. These are VR services that cannot be recorded in other service categories, and could include a wide range supports, medical care, and funding to help fully support receipt of other services. This group of services was marginally ($p = 0.08$) related to competitive closure; a consumer receiving this service is estimated to have 18% greater odds of achieving competitive employment than someone not receiving the service.

3.4.4.3. Maintenance. Receiving this service increases the odds of competitive employment by 35% compared to nonrecipients. This service involves monetary support for miscellaneous items related to job seeking (e.g., suitable clothing, living expenses, relocation costs) and expenses incurred while receiving services under an IPE.

3.4.4.4. Disability-related augmentative skills training. This training includes orientation and mobility, use of low vision aids, Braille, sign language, cognitive retraining, and similar. Receiving augmentative skills training decreases the odds of competitive employment by 30% relative to those not receiving the service.

4. Discussion

This study examined the relationship between services and competitive employment outcomes for a national population of individuals in VR who were B/VI and also who were SSDI beneficiaries. These relationships were examined using multilevel modeling, which utilized controls for individual-level demographic, socioeconomic, and disability factors, as well as state/agency-level contextual (economic and agency structure) factors.

4.1. Competitive employment rate

The overall base rate of competitive employment was 45.4%. This is compared with a 52.1% overall rate for the all-inclusive sample of all blind or visually impaired cases closed in FY 2011 ($N = 26{,}306$). This rate is very similar to, and corroborates, that found by Giesen and Cavenaugh (2013). These authors discussed why the rate may appear unexpectedly high and suggested that the accumulated work experience of SSDI beneficiaries in VR who are B/VI significantly contributes to their substantial work potential.

4.2. Patterns in service delivery

We found that services are delivered in clusters. The factor analysis procedure produces groups of variables – service receipt indicators, in this case – that are related to one another within clusters but less related to services received in other clusters. The higher correlations of services within clusters tells us that services within clusters (or factors) tend to be received together. For example, in the special and remedial services factor, consumers receiving college training might also be likely to receive reader services.

Apparently, service delivery professionals, working with the consumer to plan services for the consumer's IPE, tend to follow a pattern when arranging the array of services to address the needs and vocational goals of the consumer, whether or not they overtly realize they are doing so. This suggests that the VR process is working well because the consumer has multifaceted needs and barriers to overcome in the process of preparing for employment. In development of service plans, the IPE process appears to be occurring in a systematic and holistic fashion.

The substantive service groupings (factors or clusters) obtained were *Special and Remedial Services, Job-Related Services, Evaluation,* and *Training and Supports*. These clusters were empirically derived and seem to be a reasonable way to think about patterns of service delivery. These service groupings may be useful to agency administrators or supervisors in understanding trends in service delivery and in planning for service delivery needs in the face of changing consumer populations. Another use could be in investigating and quantifying equity in service delivery with respect to consumer subpopulations. For example, gender differences in service delivery could be described by calculating cluster total profiles across the four factors for male and female consumers. Comparisons of these profiles could reveal differing patterns in service delivery that are easily understandable, and may reveal excesses or deficits that need to be addressed. Similar profile comparisons, such as among race/ethnicity groups, age groups, or disability groups (e.g., blind vs. visually impaired) could also be informative in service planning.

4.3. Service clusters, specific services, and employment outcomes

Our second research objective was to investigate the relationship between services and competitive employment. Also, we wanted to control for non-service (e.g., consumer and state) factors. However, before discussion of these findings, we want to consider some issues regarding service-outcome relationships and their interpretation.

4.3.1. Special nature of the service-outcome relationship

Discussion of the relationship between services and outcomes has some limitations and requires a different mindset from the usual "predictor-outcome" framework. As is true for virtually all outcome research, our research is *ex post facto*; our relationships are correlational. Relationships are being investigated. However, there is an additional element with respect to services – beyond static individual consumer characteristics – in that services are planned in the IPE development process with a vocational goal in mind. In general we assume that VR is a rational system in which the IPE services are based on consumer needs, vocational goal, and consumer choice. Simplistically, it seems fair to assume that consumers "get what they need, and need what they get" to reach their vocational goal. If this is so, then in a sense, consumer characteristics, needs, and vocational goals dictate services. This context need to be

kept in mind when interpreting relationships between services and employment outcomes.

4.3.2. Special and remedial services

This group of services (as indexed by the factor sum) was negatively related to competitive employment, and thus was successful as a summary measure of the extent of services in the cluster. The overall average number of services for this factor was 0.129 (Table 1). This was the lowest level of receipt among any of the four factors. About 8.8% of the sample received just one service in this cluster, and only 1.8% received two or more of these services (out of a maximum of five). Thus it was extremely rare for a consumer to receive more than one service in this grouping of services.

The modest sized negative relationship of the special and remedial services factor sum with competitive outcome is not that surprising given the nature of services in this group. For example, reader, interpreter, personal attendant services, and remedial or literacy training would be received by consumers in need of addressing issues such as inability to read print, significant hearing disability, needing assistance in activities of daily living, or needing remedial and literacy training. These needs represent substantial barriers to competitive employment.

Regarding specific services in this group, both reader services and interpreter services were negatively related to competitive employment. It would be expected that a consumer needing reader services would have a more severe visual impairment and possibly other significant disability factors that could present barriers to competitive employment. Consumers needing interpreter services would be likely to have significant dual sensory impairments that would be a substantial barrier to competitive employment.

None of the other services in this factor – personal attendant services, basic academic remedial or literacy training, and college or university training – were significantly related to competitive employment. It was surprising to find college training in this cluster and that it was not related to competitive employment. It was provided at a 9% rate overall, and about equally in competitive and noncompetitive outcome groups. Apparently, few blind or visually impaired SSDI recipients pursue post-VR employment that need/require postsecondary education.

4.3.3. Job-related services

As expected, this group of services was positively related to competitive employment outcome, and the effect size was large. This also provided evidence that the group sum was a useful summary measure. The per-consumer average number of services was 0.67, and was markedly higher in the competitive outcome group.

Using summary measures for clusters of services, such as this measure of job-related services, made it relatively easy and parsimonious to study interactions (and less redundant than attempting to use individual services). Findings indicate that the obtained relationship between the job-related services and competitive employment is moderated by state unemployment rate and per capita income. Job-related services are important but are even more important as state unemployment rate increases and in states with higher per capita income. This may be due to better jobs being available more often in higher-income states, and such jobs may require more – or a greater degree of – job preparedness and job-seeking efforts. The level of job competition may be higher for these better jobs, and that added competitiveness may lead to situations where only the best prepared and job-ready B/VI consumers will be able to successfully compete for these jobs.

Considering specific services, job placement assistance, job search assistance, on-the-job supports, and OJT all had positive relationships with a competitive outcome, and the effects were some of the strongest in the study. Several services in this group were noted by other to be related to employment (e.g., OJT – Giesen & Cavenaugh, 2012; Rogers et al., 2005; job placement – Hennessee & Muller, 1995; Hennessee, 1997; Berry & Caplan, 2010; Rogers et al., 2005; Chin et al., 2013; Sung et al., 2014) although only the first study focused exclusively on B/VI consumers.

Receiving job placement, job search assistance, and on-the-job supports connotes more than a need for the specific service. It also means that the consumer, more or less, already has completed the multifaceted process of becoming "job ready." This situation was alluded to by Hennessey and Muller (1995) who pointed out the "tautological" relationship between job placement and employment. Though, for example, job placement is touted in previous research as a powerful predictor of employment (e.g., Rogers et al, 2005), it is not surprising or impressive that receiving placement, search assistance, or on-the-job supports are strongly related to (or predictive of) competitive employment. Receiving these services could themselves be considered as measures of the *outcome* of job readiness. Perhaps the most extreme example is on-the job supports.

Because the individual already is *in* employment, the 306% increase in odds of competitive employment for those receiving this service is hardly surprising or useful as a statistical "predictor" of employment. However, this is not to say that these services are not directly helpful for "job ready" individuals in achieving employment.

On the other hand, receiving OJT may be a more useful "early" predictor of competitive employment, as it implies the recipient has some degree of job readiness and is a candidate of sufficient suitability for the employer workplace. OJT appears to be a good way to develop or simulate work experience within the VR process. Work experience has been repeatedly shown in previous research to be very important in increasing the chance of subsequent employment (Berry, Price-Ellingstad, Halloran, & Finch, 2000; Giesen & Cavenaugh, 2013; McDonnall, 2011; Stodden, Dolwick, Gilmore, & Galloway, 2001).

Receipt of job readiness training tended to lower the likelihood of competitive employment. The finding suggests that consumers needing and receiving job readiness training are at an early stage in the progression of skill development for job readiness and generally are "at risk" (not as yet good candidates) for a competitive outcome. The risk might be overcome by taking advantage of or finding ways to bolster the job experiences of the consumer and making sure that the consumer effectively receives any needed training and support services.

An additional internal analysis was conducted with the 490 consumers who received job readiness training: 45.1% of these went on to achieve competitive employment. Those who did so had greater income at referral, greater SSDI payments, were younger at application, were in VR for a shorter time period, and received more services of the types found in the training and support factor. Even though consumers receiving job readiness training are at risk for competitive employment, the ones with more work experience, those who are younger, and those who receive needed training and support services, can still attain competitive employment.

4.3.4. Evaluation services

Although receiving more evaluation-related services was not associated with competitive employment, two of the specific services in this factor were related to competitive outcome, although in opposite directions. VR counseling and guidance was positively related to competitive employment. It seems clear that addressing existing issues related to personal adjustment to blindness or other additional disabilities, as well as family or other social issues through counseling, would be quite important for achieving competitive employment.

In contrast, the negative link between receipt of assessment services and competitive employment may involve a more complicated situation in which the needs of the individuals are not readily apparent. The negative link may, in part, be explained by the severity of disability of consumers receiving these services. For example, assessment services include those provided to VR applicants who require extended evaluation to determine if they are capable of benefitting from VR services. In any case, assessment services should be considered a risk indicator, identifying consumers who may need special attention and/or long-term monitoring.

4.3.5. Training and supports

The individual services comprising this factor (e.g., rehabilitation technology, maintenance, augmentative skills) are those received by consumers needing to adapt to aspects of their disability as they progress toward job readiness. It was logically expected and found that this group of services would be associated with competitive outcome, but the linkage may be less direct than for job-related services, resulting in the modest obtained effect sizes. The significant services involved technology, support, and specialized skills training.

For rehabilitation technology, which was positively related to competitive employment, we might reasonably expect recipients to be more intelligent, better educated, or otherwise capable of benefiting from more technology-related educational training, making them good prospects for competitive employment. At the same time the individual may have additional disabilities that were appropriately suited to be remediated by rehabilitation technology. Some previous outcome research has found receipt of rehabilitation technology services to be positively associated with employment outcome (e.g., Chiu et al., 2013).

Similarly, consumers receiving maintenance services would be expected to be making progress in their VR program of services and thus be moving toward the stage of job seeking. One might expect recipients to be viewed or established as having considerable vocational potential.

For other services, also positively related to competitive employment, if we consider the ambiguous nature of this category, it is difficult to suggest

qualitatively how it might relate to outcome. One possibility is that receiving this service reflects a kind of quantitative "overflow" associated with individuals receiving a generally high intensity of services. These may be people with high vocational potential, or persons with needs that justify many services.

In contrast, individuals receiving disability-related augmentative skills training may be adventitiously blind or otherwise have greater severity of their visual impairment. More significant vison loss is a well-established risk factor for competitive employment, as is late onset of visual impairment (see, e.g., Giesen & Cavenaugh, 2012). The late onset influence may be due in part to personal adjustment to blindness issues as well as increasing severity of additional disabilities with aging.

4.4. Individual Services and Employment Outcomes

Our second research objective, related to how specific services relate to competitive employment, can be addressed by summarizing the specific services that were positively and negatively related to competitive employment, and by attempting to categorize the reasons for the relationships; that is, attempting to say "what works" for competitive employment outcomes and who is "at risk."

4.4.1. Services positively related to competitive outcome

Eight services were positively related to competitive employment. None of these were within the special and remedial services group. Four (job placement, job search, on-the-job supports, and OJT) were within the job-related services group. Only one, counseling and guidance, was in the evaluation services group. Three (rehabilitation technology, other services, and maintenance) were in the training and supports factor group. Most of these services have been found to be associated with employment outcomes in previous research across disability types and other (non-B/VI) consumer subpopulations (e.g., Rogers et al, 2005; Chiu et al., 2013; Sung et al., 2014).

If we say these services are "what works," one might want to know *how* they work. At least the first three of the four job-related services are directly and actively focused on finding or maintaining a specific job. They appear to be direct facilitators of an employment outcome. These services, presumably, are intended to directly assist or facilitate the job-ready consumer in the final steps toward securing competitive employment. Rehabilitation technology also could provide direct assistance in the performance of a job-necessary skill. It also could qualify as working by increasing overall functional capabilities of VR consumers. Counseling and guidance, although not likely to be a direct facilitator, can be viewed as overcoming barriers by assisting the consumer with adjustment to disability, the workplace, and psychosocial issues related to employment. Maintenance and Other services seem best characterized as indicators of service intensity and indirect facilitation through needed supports so that direct facilitators may function successfully. For example, a consumer may receive financial support while receiving other services, including training and job seeking activities.

4.4.2. Services negatively related to competitive employment

These services were reader and interpreter services, job readiness training, augmentative skills training, and assessment. Services planned in the IPE are generally thought to be needed to help the consumer overcome disability-related barriers and deficits, and prepare for employment. Consumers whose IPE includes these services must have been determined to need them. The negative relationship to employment might indicate that recipients have greater severity or multiple disabilities, and that, sometimes, these services were not successful in overcoming or ameliorating the conditions they were designed to address. Thus, based on our findings, having these services in the IPE should serve as "flags" that the consumer is at risk for achieving competitive employment and may need special attention in the VR process to see that these services are as successful as possible.

4.5. Limitations

There are limitations of measures in the RSA-911 data, such as unavailability of personal, social-environmental, motivational, and VR process measures (such as consumer-counselor interaction and family involvement). Sometimes proxies or indirect indicators need to be used when direct measures are unavailable. Service information such as duration, quality, specific service cost, and success were not available (e.g., type of assistive technology or job accommodations). Similarly, information is not available on severity of cognitive or noncognitive

secondary disabilities. Nevertheless, the RSA-911 database, with its national scope and annual availability, is an important resource for understanding factors affecting employment outcomes.

5. Conclusions and recommendations

Based on our findings, we draw the following conclusions, specific to competitive employment outcomes of blind or visually impaired consumers. First, blind or visually impaired VR consumers who also are SSDI beneficiaries – by program participation requirements – have significant previous work experience. Their overall competitive closure rate was only about 7% lower than that of all B/VI consumers. VR service providers should keep this in mind and maintain high expectations, considering the work potential of SSDI-recipient consumers.

There are patterns in service delivery. Services tend to be delivered in groups or clusters, so that certain services tend to occur together. The essential service groupings are special and remedial services, job-related services, evaluation, and training and supports. This reflects well on the IPE development process in VR because it suggest a systematic, holistic rather than piecemeal approach.

Simple measures of the extent of services in each cluster can be developed and, potentially, used as a monitoring and planning tool in service provision and to compare service patterns among consumer subpopulations (e.g., gender, race/ethnicity, age).

Job placement, job search, on-the-job supports, OJT, and rehabilitation technology services are associated with competitive employment and probably have a direct effect. But, some are near "redundant" indicators of employment. OJT is direct, specific work-place training that likely results in important experiences close to actual employment experience. The effect of counseling and guidance services is probably indirect through adjustment to work, life, and disability factors. The association to employment of maintenance and other services is probably an indicator of intensity of services linked with competitive employment. These probabilities should be investigated in subsequent research.

Consumers slated to receive reader and interpreter services, job readiness training, augmentative skills training, or assessment are "at risk" for achieving competitive employment. Counselors should be mindful of the challenge to achieve job readiness for recipients and provide special attention to consumers receiving any of these services, as well as careful monitoring of provision of these services to ensure they are as successful as possible.

Even though receipt of certain services indicates a consumer is at risk, this does not preclude the possibility of achieving competitive employment. For example, in the case of receipt of job readiness training, a substantial portion of these consumers – the ones with more work experience, those who are younger, and those who receive needed training and support services – were still able to attain competitive employment.

Services found not related to outcome should not be construed as unimportant. Although their benefits are unclear, these services may improve quality of life and may otherwise lessen or overcome barriers or other risks for achieving competitive employment. Future longitudinal research is recommended.

Acknowledgements

This research was supported by National Institute on Disability, Independent Living, and Rehabilitation Research grant number 90RT5011-01-00, as administered by the U.S. Department of Health and Human Services. The contents do not necessarily represent the policy of the U.S. Department of Health and Human Services, and readers should not assume endorsement by the Federal Government.

References

Berry, H. G. & Caplan, L. (2010). Employment and earnings growth among transition-age Supplemental Security Income Program participants. *Journal of Disability Policy Studies*, *21*(3), 152-159.

Berry, H. G., Price-Ellingstad, D., Halloran, W., & Finch, T. (2000). Supplemental security income and vocational rehabilitation for transition-age individuals with disabilities. *Journal of Disability Policy Studies*, *10*(2), 151-165.

Capella-McDonnall, M. E. (2005). Predictors of competitive employment for blind and visually impaired consumers of vocational rehabilitation services. *Journal of Visual Impairment & Blindness*, *99*(5), 303-315.

Chiu, C. Y., Chan, F., Bishop, M., Cardoso, E. D. S., O'Neill, J. (2013). State vocational rehabilitation services and employment in multiple sclerosis. *Multiple Sclerosis Journal*, *19*(12), 1655-1664.

Darensbourg, B. (2013). Predictors of competitive employment of VR consumers with blindness or visual impairments. *Journal of Vocational Rehabilitation*, *38*(1), 29-34.

Giesen, J. M. (2014). [Selected analyses of FY 2011 RSA-911 Case Service Report data]. Unpublished raw data.

Giesen, J. M., & Cavenaugh, B. S. (2012). Transition-age youths with visual impairments in vocational rehabilitation: A new look at competitive outcomes and services. *Journal of Visual Impairment & Blindness*, *106*(8), 475-487.

Giesen, J. M., & Cavenaugh, B. S. (2013). Disability insurance beneficiaries with visual impairments in vocational rehabilitation: Socio-demographic influences in employment. *Journal of Visual Impairment & Blindness*, *107*(6), 453-467.

Giesen, J. M., & D'Amato, R. C. (1992). *Service delivery dimensions in vocational rehabilitation and implications for employment outcomes of blind and visually impaired clients*. Monograph II: Dimensions of the Rehabilitation Service Delivery System. Mississippi State, MS: Rehabilitation Research and Training Center on Blindness and Low Vision.

Heck, R. H., Thomas, S. L., & Tabata, L. N. (2012). *Multilevel modeling of categorical outcomes using IBM SPSS*. New York, NY: Routledge/Taylor & Francis Group.

Hennessey, J. C., & Muller, L. (1995). The effect of vocational rehabilitation and work incentives on helping the disabled-worker beneficiary back to work. *Social Security Bulletin*, *58*(1), 15-28.

Jöreskog, K. G., & Sörbom, D. (2006). *LISREL 8.8 for Windows* [Computer Software]. Lincolnwood, IL: Scientific Software International, Inc.

McDonnall, M. (2011). Predictors of employment for youths with visual impairments: Findings from the second National Longitudinal Transition Study. *Journal of Visual Impairment & Blindness*, *105*(8), 453-466.

Parry, C. D., & McArdle, J. J. (1991). An applied comparison of methods for least-squares factor analysis of dichotomous variables. *Applied Psychological Measurement*, *15*(1), 35-46.

Raudenbush, S. W., Bryk, A., & Congdon, R. T. (2010). HLM 7.0 Hierarchical linear and non-linear modeling [Computer software]. Lincolnwood, IL: Scientific Software International.

Rehabilitation Services Administration. (2008). *Reporting manual for the case service report (RSA-911)*. Washington, DC: U.S. Dept. of Education.

Rehabilitation Services Administration Commissioner. (1997). *Employment goal for an individual with a disability* (RSA Policy Directive RSA-PD-97-04). Washington, DC: Author.

Rehabilitation Services Administration Commissioner. (2001). *Implementation of informed choice* (RSA Policy Directive RSA-PD-01-03). Washington, DC: Author.

Rehabilitation Services Administration Commissioner. (2014). *Transition planning and services provided through the state vocational rehabilitation services program* (RSA Technical Assistance Circular RSA-TAC-14-03). Washington, DC: Author.

Rogers, J. B., Bishop, M., & Crystal, R. M. (2005). Predicting rehabilitation outcome for Supplemental Security Income and Social Security Disability Income recipients: Implications for consideration with the Ticket to Work Program. *Journal of Rehabilitation*, *71*(3), 5-10.

Stodden, R. A., Dowrick, P., Gilmore, S., & Galloway, L. M. (2001). *A review of secondary school factors influencing postschool outcomes for youth with disabilities*. A report from the National Center for the Study of Postsecondary Educational Supports. Retrieved from http://www.rrtc.hawaii.edu/documents/products/phase1/043-H01.pdf

Sung, C., Muller, V., Jones, J. E., & Chan, F. (2014). Vocational rehabilitation service patterns and employment outcomes of people with epilepsy. *Epilepsy Research*, *108*(8), 1469-1479.

U.S. Census Bureau. (2012). *Mean income in the past 12 months (in 2011 inflation-adjusted dollars) 2011 American Community Survey 1-year estimates*. Retrieved from http://factfinder2.census.gov

U.S. Census Bureau. (2013). Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2013 (NST-EST2013-01). Retrieved from http://www.census.gov/popest/data/state/totals/2013/tables/NST-EST2013-01.csv

U.S. Department of Labor, Bureau of Labor Statistics. (2012). *Unemployment Rates for States Annual Average Rankings Year: 2011 [Table]*. Retrieved from http://www.bls.gov/lau/lastrk11.htm

U.S. Government Accountability Office. (2007a). *Vocational rehabilitation: Earnings increased for many SSA beneficiaries after completing VR services, but few earned enough to leave SSA's disability rolls*. (GAO Publication No. 07-332). Retrieved from http://www.gao.gov/new.items/d07332.pdf

U.S. Government Accountability Office. (2007b). *Vocational rehabilitation: Improved information and practices may enhance state agency earnings outcomes for SSA beneficiaries* (GAO Publication No. 07-521). Retrieved from http://www.gao.gov/new.items/d07521.pdf

U.S. Office of Management and Budget (2015). *Fiscal year 2015 budget of the U.S. government*. Retrieved from http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/budget.pdf