

Vocational rehabilitation as a public health intervention for young African American men with substance use disorders

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Abstract.

OBJECTIVE: The purpose of this study is to identify predictors of employment for young African American men recovering from substance use disorders.

METHODS: Data for 684 young African American men with substance use disorders were extracted from the Rehabilitation Services Administration's (RSA) Case Service Report (RSA-911) database. Logistic regression analysis using the purposeful selection approach was utilized to identify predictors of competitive employment.

RESULTS: Young African American men recovering from substance use disorders who received on-the-job supports, job placement, information and referral services, and other services were more likely to attain competitive employment than those who did not receive these vocational rehabilitation services. Interestingly, job readiness training and job search assistance were not significant predictors of successful employment outcomes, suggesting that for clients facing multiple intersecting stigmas, it may be more realistic and effective to use the selective placement approach to find and match them directly with job openings and provide them with ongoing supports to help them build a meaningful work history.

CONCLUSIONS: Vocational rehabilitation services have significant positive impact on employment outcomes for young African American men recovering from substance use disorders. Collaboration between rehabilitation and other health professionals to promote the use of employment services to improve public health outcomes for young African American men is warranted.

Keywords: Vocational rehabilitation, African American youth, substance abuse, employment, public health

1. Introduction

Labor force participation has been on a steady decline among young African American men (Weller & Fields, 2011; Holzer, Offner, & Sorensen, 2005). Jobless rates dramatically increased from approximately 18% to 32% for individuals 16 to 24 years old from the 1980s to the 1990s (Holzer & Offner, 2002). In 2013, the Bureau of Labor Statistics (BLS) reported the highest

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unemployment rates of 33.4% among young African American men. The unemployment problem is even more profound for African American men recovering from substance use disorders. Although young African American men are reported to have similar or reduced rates of substance abuse (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014) compared to their White counterparts, this population is faced with more pervasive psychosocial stressors, which undoubtedly worsen symptoms and interfere with opportunities for employment. A major example of a psychosocial stressor includes the stress and problems related to racism, which often exacerbate severity of substance use for African Americans. Young minority men with substance use disorders encounter more adverse health and social consequences than White individuals, including unintentional injury, violence, legal problems, homelessness, and premature death (Cooke, 2004; Mukku, Benson, Alam, Richie, & Bailey, 2012; Seth, Murray, Braxton, & DiClemente, 2013). When seeking help from healthcare and rehabilitation professionals for substance abuse, minority groups experience lower retention, higher dropout rates, and treatment adherence problems (Milligan, Nich, & Carroll, 2004). Consequently, multiple disadvantages in various life domains, including education, employment, and healthcare, greatly impact work participation as well as health-related quality of life (Cooke, 2004).

Well-documented evidence demonstrates significant correlations between societal stressors, such as unemployment, and general health problems (Pharr, Moonie, & Bungum, 2012). Unemployment influences health through the loss of substantial income, negative effects on psychosocial factors, and increased involvement in risky health behaviors (Braveman, Egerter, & Williams, 2011). Unemployment has also been linked to chronic diseases such as cardiovascular disease, hypertension, and musculoskeletal disorders (Pharr et al., 2012; Quarells, Liu, & Davis, 2012). Individuals who are unemployed experience higher rates of chronic stress, anxiety, depression, substance abuse, and mental health hospitalizations than those who are employed (Henkel, 2011; Roelfs, Shor, Davidson, & Schwartz, 2011).

According to the Centers for Disease Control and Prevention (2010), 21% of unemployed persons are diagnosed with general depression, as compared to only 6% of employed persons. Similarly, Jefferis et al. (2011) found that people who are unemployed had a higher risk (risk ratio [RR] = 1.57; 95% CI: 0.76-3.27) of depression compared to people who were employed. Pharr et al. (2012) investigated the relationships between

unemployment and depression/anxiety and found significantly lower mental health scores, along with scores indicating limited improvements in mental health over the duration of unemployment. African American men are significantly less likely to refill drug prescriptions after the initial diagnosis of depression (Satre, Campbell, Gordon, & Weisner, 2010). Although a clear, causal connection between unemployment and poor mental health has not been established, the current evidence does suggest the presence of mental health difficulties during periods of extended unemployment (Pharr et al., 2012).

Competitive employment not only provides essential benefits such as an income and access to community and healthcare resources (Maulik, Mendelson, & Tandon, 2011), it also contributes to positive psychosocial outcomes including enhanced self-esteem, self-worth, purpose of life, hope, time structure, socialization, and subjective well-being (Szymanski & Parker, 2009). Employment intervention programs available to people with disabilities may prove particularly beneficial to young African American men, who underutilize traditional mental health and substance abuse programs (Cooper, MacMaster, & Rasch, 2010). The state-federal vocational rehabilitation (VR) program, which provides vocational services to assist persons with disabilities in pursuit of competitive employment in integrated settings, could be considered a viable public health intervention for this population (Andrew & Faubion, 2008; Sung, Brooks, Muller, Chan, & Strand, 2012).

State VR agencies are often overlooked as a resource for young African American men recovering from substance use disorders. In fact, the effect of VR interventions on employment for this particular group is relatively unknown. Therefore, the primary purpose of the present study was to identify significant predictors of employment for young African American men recovering from substance use disorders receiving services from state VR agencies in order to improve the provision of VR services as a public health intervention for this population.

2. Method

2.1. Participants

Data for the current study were extracted from the U.S. Department of Education's Rehabilitation Service Administration Case Service Report (RSA-911) database, which is a large administrative dataset that

Table 1
Demographic characteristics

Characteristic/service	<i>n</i>	%
Age		
16–18	56	8.2
19–22	306	44.7
23–25	322	47.1
Education level		
Special education	24	3.5
Less than high school	348	50.9
High school	259	37.9
Associate degree	48	7.0
Bachelor degree or higher	5	0.7
SSI/SSDI recipient		
Yes	12	1.8
No	672	98.2
Depressive and other mood disorders		
Yes	43	6.3
No	641	93.7

includes detailed information regarding demographics, disability, types of services, and employment outcomes for people with disabilities receiving state VR services in the United States.

The sample extracted from the RSA-911 dataset for the present study included 684 young African American men with substance use disorders whose VR cases were closed in the fiscal year 2011. The mean age of the participants was 22.08 ($SD = 2.32$) with 8.2% of the participants ($N = 56$) aged 16 to 18, 44.7% ($N = 306$) aged 19 to 22, and 47.1% ($N = 322$) aged 23 to 25 years old. Fifty percent of the participants ($N = 348$) had less than high school education, 37.9% ($N = 259$) had at least high school education, 7.0% ($N = 48$) had an associate degree, 0.7% ($N = 5$) had a bachelor degree or higher, and 3.5% ($N = 24$) had special education. Additional demographic information for the participants is presented in Table 1.

2.2. Outcome and predictor variables

Competitive employment was the dependent variable for this study, which is defined as work in an integrated setting, self-employment, or employment in a state-managed Business Enterprise Program (BEP) that is performed on a full-time or part-time basis for which an individual is compensated at or above minimum wage. BEPs refer to vending facilities, small businesses, or home industries led by people with disabilities and managed by state VR agencies. Minimum wage is determined based on state or federal wage, whichever is higher.

Predictor variables in this study were: (1) demographic variables that included age at application (i.e.

16–18, 19–22, 23–25 years old; 16–18 years old as a reference category); (2) education level at application (i.e. special education, less than high school, high school graduate, associate degree, bachelor degree or higher; special education as a reference category); (3) a medical variable (i.e. depressive and other mood disorders); (4) cash benefits from the federal, state, and/or local government for the reason of an individual's disability (i.e. SSI or SSDI); and (5) VR services. The VR services included assessment, diagnostics and treatment of impairments, VR counseling and guidance, college or university training, occupational vocational training, on-the-job training, basic academic remedial literacy or literacy training, job readiness training, disability related augmentative skills training, miscellaneous training, job search assistance, job placement assistance, on-the-job support, transportation services, maintenance services, rehabilitation technology, reader services, interpreter services, personal attendance services, technical assistance services, information and referral services, and other services. Detailed descriptions of these variables are shown in Table 2.

2.3. Data analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS, 2007). Purposeful selection multivariate logistic regression was computed to investigate contribution of demographic variables, co-existing depression, disability benefits, and VR services on employment outcomes of young African American men with substance use disorders.

Purposeful selection multivariate logistic regression is classified by deliberate involvement of researchers in the selection of predictor variables to determine effects of predictor variables on outcome variables (Hosmer, Lemeshow, & Sturdivant, 2013). Purposeful selection method is favored over other selection methods, such as stepwise and best subsets, as it provides researchers the opportunity to use expert judgment in the model building process, retains variables that narrowly fail to achieve a pre-designated threshold, and excludes noise variables in the model (Bursac, Gauss, Williams, & Hosmer, 2008). Specifically, univariate analyses were used to identify variables significantly associated with employment at $p < 0.25$. Significant variables were entered into a multivariate model and variables that were still significant were retained and variables no longer statistically significant were removed if their removal did not change the beta coefficients of the significant variables in the model by 20% (Bursac et al., 2008; Hosmer et al., 2013).

Table 2
Description of vocational rehabilitation services

Type of services	Description of services
Assessment	Services provided and activities performed to determine an individual's eligibility for VR services, to assign an individual to a priority category of a state VR agency that operates under an order of selection, and/or to determine the nature and scope of VR services to be included in the Individual Plan for Employment (IPE); included in this category are trial work experiences and extended evaluation.
Diagnosis and treatment of impairments	Surgery, prosthetics and orthotics, nursing services, dentistry, occupational therapy, physical therapy, speech therapy, and drugs and supplies; this category includes diagnosis and treatment of mental and emotional disorders.
VR counseling and guidance	Discrete therapeutic counseling and guidance services necessary for an individual to achieve an employment outcome, including personal adjustment counseling; counseling that addresses medical, family, or social issues; vocational counseling; and any other form of counseling and guidance necessary for an individual with a disability to achieve an employment outcome; this service is distinct from the general counseling and guidance relationship that exists between the counselor and the individual during the entire rehabilitation process.
College or university training	Full-time or part-time academic training above the high school level that leads to a degree (associate, baccalaureate, graduate, or professional), a certificate, or other recognized educational credential; such training may be provided by a four-year college or university, community college, junior college, or technical college.
Occupational/vocational training	Occupational, vocational, or job skill training provided by a community college and/or a business, vocational/trade, or technical school to prepare students for gainful employment in a recognized occupation; this training does not lead to an academic degree or certification.
On-the-job training	Training in specific job skills by a prospective employer; generally the individual is paid during this training and will remain in the same or a similar job upon successful completion; this category also includes apprenticeship training programs conducted or sponsored by an employer, a group of employers, or a joint apprenticeship committee representing employers and a union.
Basic academic remedial or literacy training	Literacy training or training provided to remediate basic academic skills needed to function on the job in the competitive labor market.
Job readiness training	Training to prepare an individual for the world of work (e.g. appropriate work behaviors, methods for getting to work on time, appropriate dress and grooming, methods for increasing productivity).
Disability-related, augmentative skills training	Service includes, but is not limited to, orientation and mobility, rehabilitation teaching, training in the use of low vision aids, Braille, speech reading, sign language, and cognitive training/retraining.
Miscellaneous training	Any training not recorded in one of the other categories listed, including GED or high school training leading to a diploma.
Job search assistance	Job search activities that support and assist a consumer in searching for an appropriate job; may include help in preparing resumes, identifying appropriate job opportunities, and developing interview skills, and may include making contacts with companies on behalf of the consumer.
Job placement assistance	A referral to a specific job resulting in an interview, whether or not the individual obtained the job.
On-the-job supports	Support services provided to an individual who has been placed in employment in order to stabilize the placement and enhance job retention; such services include job coaching, follow-up and follow-along, and job retention services.
Transportation services	Travel and related expenses necessary to enable an applicant or eligible individual to participate in a VR service; includes adequate training in the use of public transportation vehicles and systems.
Maintenance services	Maintenance means monetary support provided for those expenses such as food, shelter, and clothing that are in excess of the normal expenses of the individual, and that are necessitated by the individual's participation in an assessment for determining eligibility and VR needs or while receiving services under an individualized plan for employment (IPE).
Rehabilitation technology	The systematic application of technologies, engineering methodologies, or scientific principles to meet the needs of, and address the barriers confronted by, individuals with disabilities in areas that include education, rehabilitation, employment, transportation, independent living, and recreation; includes rehabilitation engineering services, assistive technology devices, and assistive technology services.

(Continued)

Table 2
(Continued)

Type of services	Description of services
Reader services	Services for individuals who cannot read print because of blindness or other disability; includes reading aloud and transcribing printed information into Braille or sound recordings if requested by the individual; generally are offered to individuals who are blind or deaf-blind but may also be offered to individuals unable to read because of serious neurological disorders, specific learning disabilities, or other physical or mental impairments.
Interpreter services	Sign language or oral interpretation services performed by specially trained persons for individuals who are deaf or hard of hearing, and tactile interpretation services for individuals who are deaf-blind; includes real-time captioning services; does not include language interpretation.
Personal attendant services	Those personal services that an attendant performs for an individual with a disability such as bathing, feeding, dressing, providing mobility and transportation, and so on.
Technical assistance services	Technical assistance and other consultation services provided to conduct market analyses, to develop business plans, and to provide resources to individuals in the pursuit of self-employment, telecommuting, and small business operation outcomes.
Information and referral services	Services provided to individuals who need assistance from other agencies (through cooperative agreements) not available through the VR program.
Other services	All other VR services that cannot be recorded elsewhere; included here are occupational licenses, tools and equipment, initial stocks and supplies, and medical care for acute conditions arising during rehabilitation and constituting a barrier to the achievement of an employment outcome.

Source: Reporting Manual for the Case Service Report (RSA-911).

3. Results

3.1. Vocational rehabilitation services and employment outcomes

Forty-five percent of the participants ($N=313$) achieved competitive employment after receiving VR services. The median time between eligibility of services and case closure was 14.51 months (range 0.40–134 months). The mean number of services provided to participants was 4.61 ($SD=2.48$) with a median case expenditure for services of 1,079 (range 0–18,141) U.S. dollars. The mean number of hours participants worked per week was 35.44 ($SD=7.38$), with only the top 2% of those working more than 40 hours per week. On average, the participants earned 324.55 ($SD=108.91$) U.S. dollars per week, with only the top 25% earning more than 400 U.S. dollars per week. The successfully employed group received significantly more types of VR services ($M=5.06$, $SD=2.41$; $M=4.23$, $SD=2.48$; $t(682)=4.38$, $p<0.01$; $d=0.33$) and spent significantly less time in VR ($M=15.94$, $SD=15.20$; $M=21.80$, $SD=17.61$; $t(682)=-4.66$, $p<0.01$; $d=-0.35$) than the unemployed group.

3.2. Predictors of employment

Participants' age was significantly associated with competitive employment ($\chi^2(2, N=684)=6.99$, $p<0.05$; Cramer's $V=0.10$). Participants who were

between 19–22 and 23–25 years old had higher employment rates than participants who were between 16–18 years old. Education level was also significantly associated with employment outcome ($\chi^2(4, N=684)=10.14$, $p<0.05$; Cramer's $V=0.12$). Participants with an associate degree or bachelor degree or higher had better employment rates than participants with a high school degree, less than high school, or from special education. Participants who received cash benefits were less likely to be employed than participants who did not receive cash benefits ($\chi^2(1, N=684)=6.89$, $p<0.05$; Cramer's $V=0.10$). No

Table 3
Vocational rehabilitation services provided to consumers

Vocational rehabilitation service	<i>n</i>	%
Assessment	495	72.4
Diagnostics and treatment	296	43.3
Counseling and guidance	448	65.5
College or university training	11	1.6
Occupational or vocational training	74	10.8
On-the-job training	39	5.7
Remedial training	4	0.6
Job readiness training	213	31.1
Augmentative skills training	1	0.1
Miscellaneous training	163	23.8
Job search assistance	282	41.2
Job placement assistance	362	52.9
On-the-job support	142	20.8
Transportation services	323	47.2
Maintenance	117	17.1
Rehabilitation technology	2	0.3
Information and referral	50	7.3
Other services	133	19.4

significant association was found between depression and other mood disorders and employment outcomes ($\chi^2(1, N=684)=0.28, p=0.59$; Cramer's $V=0.02$) for the participants.

Provision of VR services to the clients varied. Assessment (72.4%, $N=495$), VR counseling (65.5%, $N=448$), and job placement services (52.9%, $N=362$) were the three most provided services to the clients. The following VR services were provided to less than 10% of the participants: college or university training, on-the-job training, basic academic remedial and literacy training, disability related augmentative skills training, rehabilitation technology, reader, interpreter, personal attendant, technical assistance, and information and referral services. Further information regarding percentages of the services provided to the participants is presented in Table 3.

3.3. Logistic regression analysis

The contribution of demographic variables, depression and other mood disorders, cash benefits, and VR services on competitive employment for young African American males was investigated using purposeful selection multivariate logistic regression analysis. The univariate analysis indicated that age, education level, receiving cash benefits, and VR services (i.e., assessment, on-the-job training, job readiness, job placement, on-the-job support, maintenance, rehabilitation technology and other services) were significantly associated with competitive employment at $p=0.25$ or a lower level. All of these variables were entered into a regression model. In presence of the other variables, education level, receiving cash benefits, assessment, on-the-job training, maintenance and rehabilitation technology services were found to be non-significant at the $p=0.05$ level. As suggested by Hosmer et al. (2013), those variables, one at a time, were removed from the model. Removal of the aforementioned variables did not change the Beta coefficient of the significant variables by more than 20%. The non-significant variables that were set aside at step 1 were put into the regression model one at a time. Both job search assistance and information and referral services turned out to be significant in the presence of other variables. None of the other non-significant variables at step 1 turned out to be significant. The final model included age, on-the-job supports, job placement, information and referral services, other services, job readiness training, and job search assistance.

The omnibus test for the final model was found to be significant ($\chi^2(8, N=684)=237.86, p<0.001$). The Nagelkerke R^2 value of .39 indicated that the predictors moderately explained variance in competitive employment. Seventy-seven percent of the time the predictors in the final model were able to correctly classify the employment outcome. The significant predictors in the final model included:

- Participants who were 23–25 years old were 2.68 times (OR = 2.68; 95% CI: 1.22–5.88) more likely to attain employment than clients who were 16–18 years old.
- Participants who were 19–22 years old were 1.80 times (OR = 1.80; 95% CI: 0.82–3.95) more likely to attain employment than clients who were 16–18 years old.
- Participants receiving job placement services were 4.34 times (OR = 4.34; 95% CI: 2.64–7.11) more likely to attain employment.
- Participants receiving on-the-job support services were 32.55 times (OR = 32.55; 95% CI: 17.14–61.58) more likely to attain employment.
- Participants receiving other services was 2.46 times (OR = 2.46; 95% CI: 1.56–3.87) more likely to attain employment.
- Participants receiving information referral services were 2.87 times (OR = 2.87; 95% CI: 1.30–6.36) more likely to attain employment.
- Participants who received job search assistance (OR = 0.11; 95% CI: 0.06–0.20) and job readiness training (OR = 0.60; 95% CI: 0.38–0.95) were found to be less likely to attain employment than participants who did not receive those services.

4. Discussion

In the current study, 45% of young African American men were closed as employed, and 55% were closed as unemployed after receiving VR services. Although the success rate is lower than the overall success rate of about 55% for all VR clients in recent years (RSA, 2011), it is relatively high given the low employment rates of young African American men (Holzer et al., 2005). However, individuals between the ages of 16 and 18 at application had poorer employment outcomes at closure than those aged between 19 and 25 at application. This is consistent with data collected over the last several decades by the Current Population Survey, which has found the lowest employment rates

for African American men aged 16 to 19 in comparison to those aged 20 to 24 or 25 to 34 (Holzner & Offner, 2002). Our findings suggest that individuals who are in their 20s may have more work experience, maturity, and motivation to find a job than those who are still in their teens. Employers may also be less comfortable hiring young African American men in their teens recovering from substance use disorders. Although receiving social security disability benefits was found to have a negative impact on employment outcomes for people with disabilities (Dutta, Gerve, Chan, Chou, & Ditchman, 2008), very few participants in the current study were SSI/SSDI recipients. The lack of financial support from government agencies may contribute to the higher motivation among young African American men in their 20s to obtain and maintain employment than youth in their teens who may be still living at home.

Regarding VR service variables, on-the-job supports, job placement, information and referral services, and other services were significant predictors of successful employment outcomes, while job readiness training and job search assistance were negatively associated with successful employment outcomes. The negative effect of job readiness training and job search assistance of employment outcomes may be counterintuitive at first glance. However, there is ongoing debate on the value of prevocational training for highly stigmatized disabilities such as mental illness and dual diagnosis. Opponents of the “train-then-place” viewpoint argue that prevocational training may stall the process of vocational rehabilitation, whereas “place-then-train” strategies allow counselors to work with clients while they are most motivated to obtain competitive employment (Corrigan, 2001). Randomized controlled trials on the individual placement and support model of supported employment practices confirm the effectiveness of rapid job placement and on-the-job supports (Bond, Drake, & Becker, 2008), which is consistent with the present findings. Young African American men with substance use disorders face multiple intersecting oppressions (e.g., race/ethnicity, gender, socioeconomic status, and substance abuse history) in their social environments. As a result of intersecting stigmas, these individuals face disadvantages in multiple domains of living, leading to seemingly insurmountable barriers to finding employment. Since employers may be hesitant to hire members of this highly stigmatized and marginalized group of individuals, it may be more effective to use the selective placement approach to find and match young African American men recovering from substance use disorders

directly with job openings and provide them with ongoing supports. Our findings suggest that on-the-job supports can be effective in helping young African American men with substance use disorders to find and keep employment. Previous research, which demonstrates that individualized and long-term supports can help people with mental health disorders to cope with demands of the workplace, develop good work habits, and build a meaningful work history, further supports the current findings (Bond, 2004).

Information and referral services are provided to individuals who need assistance from other agencies (through cooperative agreements) not available through the VR program. Receipt of these services was associated with better employment outcomes, suggesting that young African American men recovering from substance use disorders may have multiple service needs and the provision of wraparound health and human service supports for this high risk group of individuals will improve mental health and substance abuse recovery, health status, and VR service outcomes. Finally, for young African American men recovering from substance use disorders, relapse from substance use is common, and many individuals have other health crises that require attention. These young African American men recovering from substance use disorders may not have the financial resources to deal with such health crises. In addition, these young men may not have the money to purchase tools and equipment needed to complete their vocational and skills training programs. These financial obstacles create a barrier to the achievement of a successful employment outcome, and providing other services to help overcome these barriers appears to be a wise investment, as receipt of other services was associated with better VR outcomes.

4.1. Limitations

This study used archival data and employed an *ex post facto* design; therefore, the relationships observed in the present findings cannot be considered causal. The data originated from rehabilitation counselors entering case information at different points during the VR process, which may affect the reliability of the data. The RSA-911 dataset provides very limited demographic information and other potentially significant demographic covariates (e.g., felony record, health problems, and homelessness, etc.) that could present substantial challenges in the VR process, but these variables were not available for analysis.

5. Conclusion

Poverty and unemployment are significantly associated with poor health-related quality of life. Therefore, employment is an important public health intervention for people in poverty including a large portion of people with disabilities. Although state VR agencies can be a critical resource for addressing the disproportionate unemployment rates for young African American men recovering from substance use disorders, state VR services are significantly underutilized by this highly stigmatized group of individuals. The current study demonstrated VR services can be used to improve the likelihood of successful employment outcomes for young African American men with substance use disorders. In addition, VR services that are particularly effective and services that are ineffective were identified for this population. This insight can be used to help rehabilitation counselors improve VR service provision for young African American men with substance use disorders, which may also lead to improved health-related quality of life for these individuals.

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