Impact of a Summer Work Experience Program on Employment Outcomes

for Youth who are Blind or Have Low Vision

Jennifer L. Cmar, Ph.D., COMS*

Michele C. McDonnall, Ph.D., CRC

The National Research and Training Center on Blindness and Low Vision

Mississippi State University

*Corresponding Author: Jennifer L. Cmar, The National Research and Training Center on

Blindness and Low Vision, P.O. Box 6189, Mississippi State, MS 39762. Phone: 662-325-2001

Email: jcmar@colled.msstate.edu

Author Note:

Abstract

BACKGROUND: Work experience programs are a common element of work-based learning for youth with disabilities under the Workforce Innovation and Opportunity Act, but few studies have focused on the effectiveness of these programs for youth who are blind or have low vision (B/LV).

OBJECTIVE: The purpose of this study was to examine the impact of a vocational rehabilitation (VR) agency-sponsored summer work experience program on employment outcomes for transition-age youth with B/LV.

METHODS: In this retrospective cohort study, we used propensity score matching to analyze de-identified case records obtained from a VR agency. Participants were 14 to 24 years old at VR application and had a primary or secondary disability of blindness, visual impairment, or deaf-blindness. The matched sample ($N = 302$) included 151 youth who participated in the program and 151 youth who did not participate.

RESULTS: Summer work experience participants were more likely to obtain competitive employment at VR case closure than non-participants. Work hours and hourly earnings did not differ significantly between the two groups.

CONCLUSIONS: These findings support the association between paid community-based work experiences and future employment for B/LV youth who receive VR services.

Keywords: blind, low vision, work experience, vocational rehabilitation, employment

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1. Introduction

There are longstanding disparities in post-school employment outcomes for youth with

and without disabilities, including youth who are blind or have low vision (B/LV). These

disparities have been well documented in the series of National Longitudinal Transition Studies

(Lipscomb et al., 2017; Newman et al., 2011; Wagner et al., 1991) and were an impetus for the

focus on improving competitive employment outcomes for youth with disabilities in the

Workforce Innovation and Opportunity Act (WIOA, 2014). Given these disparities, a large

amount of research has been conducted to identify factors associated with positive employment

outcomes for youth with disabilities. This research has been summarized in systematic reviews

(Mazzotti et al., 2016; Test et al., 2009) and a meta-analysis (Haber et al., 2016), which provide

ample evidence that early paid work experiences are associated with future employment for

youth with disabilities. Several studies have also documented an association between early paid

work experiences and future employment specifically for youth who are B/LV, summarized in a

recent systematic review (Lund & Cmar, 2020). However, the aforementioned findings are based

on correlational research and therefore do not provide evidence of a causal relationship between

early work and future employment for youth with disabilities.

These reviews and literature syntheses have differentiated between paid work

experiences and work study programs but have not differentiated between sponsored work

experiences and unsponsored work experiences (i.e., real jobs). Short-term sponsored work

experiences have long been a typical component of transition programs for youth who are B/LV.

These work experiences are considered sponsored because they are temporary and are provided

or coordinated by an entity other than an employer, such as a school or vocational rehabilitation (VR) agency. In the only available review of work experience programs, Sattar defined work experience as a "temporary, paid or unpaid job activity that occurs on-site at an employer or simulates the workplace" that includes short-term work assignments, on-the-job training, internships, job shadowing, and work-based learning opportunities (Sattar, 2010, p. 2). Work experiences are valuable because they allow participants to practice workplace skills that may help them obtain employment in the future (Sattar, 2010). WIOA's inclusion of work-based learning as one of the five required pre-employment transition services (pre-ETS) has resulted in an increase in work experiences provided to youth with disabilities by VR agencies (U.S. Government Accountability Office, 2018). Variability in the provision of work-based learning by VR agencies in terms of frequency and implementation mechanisms has been documented (Honeycutt et al., 2019; Taylor et al., 2021).

Despite the increased popularity of work experience programs, findings have been mixed as to the effectiveness of such programs for youth with challenges to employment (Sattar, 2010). In a review of 11 rigorous evaluations of work experience programs, all programs for youth that demonstrated strong impacts involved additional components, such as academic or vocational training, job search and placement assistance, and other supports (Sattar, 2010). There are two popular work experience programs designed for youth with disabilities: Project SEARCH (http://projectsearch.us) and Bridges from School to Work (https://bridgestowork.org). These programs have been implemented with a large number of participants who achieved positive outcomes, but they have not been rigorously evaluated. They also involve much more than just a work experience. Project SEARCH, the most widely utilized program for pre-ETS work-based learning implementation across 10 VR agencies (Taylor et al., 2021), is an intensive 9-month

program that typically takes the place of the last year of high school for participants. A few work experience programs that have been evaluated more rigorously have been found to be effective: Project SEARCH+ASD (Wehman et al., 2017, 2020), START (Langi et al., 2017), and PROMISE (Hartman et al., 2019), but again, all of the programs incorporated much more than just a work experience. These intensive programs have ample evidence of effectiveness, but we do not know whether the work experience or other aspects of the programs resulted in their success. Sattar (2010) noted that evaluations of the effectiveness of work experience programs could be improved by utilizing rigorous studies to isolate the effects of work experience on employment-related outcomes.

We identified only two studies that specifically evaluated programs that focused exclusively or primarily on providing a work experience, both sponsored by VR agencies post-WIOA. Missouri VR implemented a summer work experience program in 2015 for consumers in their last year of high school as part of their pre-ETS service delivery system. The program's effectiveness was evaluated with a linear probability model including control variables, which indicated that consumers who participated in the summer work experience program were significantly *less* likely to achieve employment than non-participants (Clause, n.d.). An evaluation of Oklahoma VR's four work experience programs using data from fiscal years 2010 to 2018 found that participation in the programs was not associated with employment at case closure for youth (Osmani, 2020). However, only two of Oklahoma VR's four programs were utilized by many consumers: 35.7% of transition-age consumers participated in the paid School Work Study experience, and 8.4% participated in the unpaid Work Adjustment Training experience. Only 0.8% of youth participated in the paid iJobs summer work experience program, and 2.6% participated in the unpaid Project SEARCH. When only considering youth who

participated in the work experience programs, Project SEARCH participants were more likely to obtain employment at case closure, although the effect was small; participation in the other programs that primarily focused on providing a work experience was not associated with future employment (Osmani, 2020).

Little research has been conducted about the effectiveness of sponsored work experiences in improving employment outcomes for youth who are B/LV. To date, only two studies have addressed this topic (McDonnall, 2010; McDonnall & O'Mally, 2012). Both studies evaluated school-sponsored programs, and neither study provided evidence of the effectiveness of these programs. Utilizing National Longitudinal Survey of Youth 1997 data, McDonnall (2010) documented that participation in school-to-work programs (e.g., internships, job shadowing, school-sponsored enterprise) was not associated with future number of work hours. Utilizing National Longitudinal Transition Study-2 data, McDonnall and O'Mally (2012) likewise found that participation in school-sponsored work was not associated with future employment. No research is available on the effectiveness of VR-sponsored work experience programs for youth who are B/LV. We know that VR agencies provide many such programs via pre-ETS work-based learning (Honeycutt et al., 2019; U.S. Government Accountability Office, 2018), but we do not know if these programs are effective.

The purpose of this study was to address this knowledge gap by evaluating the impact of a summer work experience program administered by the Alabama Department of Rehabilitation Services (ADRS), specifically their Blind and Deaf Services Division. We evaluated the program's impact on employment obtainment and employment quality measures (i.e., hours worked and hourly earnings). The following research questions were addressed:

1. Were youth who participated in a VR summer work experience program more likely to be competitively employed at case closure than youth who did not participate?

2. Of youth who achieved competitive employment, did summer work experience participants work more hours than non-participants?

3. Of youth who achieved competitive employment, did summer work experience participants have higher earnings than non-participants?

2. Method

2.1 Sample

We used administrative data from ADRS for this study. ADRS staff provided the research team with a de-identified dataset containing case records for all individuals who participated in the summer work experience program between 2008 and 2020 and a comparable sample of non-participants. The full dataset included records for 1,122 individuals who (a) had a primary or secondary disability of blindness, visual impairment, or deaf-blindness; (b) applied for VR services on or after 1/1/2002; (c) were 14 to 24 years old at application; (d) received services from the Blind and Deaf Services Division; (e) had an Individualized Plan for Employment; and (f) had their case closed as of 4/9/2021. As shown in Figure 1, we excluded individuals from the analysis sample for the following reasons: (a) case closed before the summer of 2008, (b) older than 30 years at case closure, or (c) had missing data on any study covariates. The Institutional Review Board at Mississippi State University reviewed the study protocol and determined that it was not human subjects research and therefore did not require institutional review board oversight.

Applying the exclusion criteria resulted in a sample size of 838 participants. Their average age at VR application was 18.51 years ($SD = 2.89$). Over half of the participants were

male (54.4%, *n* = 456). Most participants' highest level of education at application was less than

a high school diploma or a high school diploma or equivalent. At application, 35.8% (*n* = 300) of

participants received Supplemental Security Income (SSI), and 8.2% (*n* = 69) received Social

Security Disability Insurance (SSDI). Few participants (9.7%, *n* = 81) were employed with or

without supports at application, and 51.7% (*n* = 433) were competitively employed at closure.

Additional demographic information is presented in Table 1.

2.2 Intervention Description

ADRS Blind and Deaf Services Division began the Summer Work Experience (SWE)

program in 2005 with students at the Alabama School for the Blind. The program provides

youth, typically high school or college students, the opportunity to work at a job with an

employer in a community setting for 6 weeks. Participants can work full time, up to 240 hours

total, and are paid minimum wage. ADRS, rather than the employer, provides the funds to pay

the participants and provides accident insurance that covers the youth while working at the

employer's job site. ADRS collaborates with the Alabama Institute for Deaf and Blind (AIDB)

and local community rehabilitation providers (CRPs) to implement the program. AIDB and the

CRPs provide an orientation session for participants and their families (individually or in

groups), which takes about half a day and consists of basic soft skills and job readiness training,

and information about the consumers' responsibilities during the work experience. The CRPs

also assist with finding employer placements that coincide with participants' interests and

processing the paychecks for the consumers. VR counselors inform participants who receive SSI

or SSDI benefits about earnings exemptions and refer them to benefits counselors if they need

additional assistance navigating the process. ADRS, AIDB, or CRP staff provide short-term job

coaching to participants as needed.

2.3 Study Design

We used a retrospective cohort design to evaluate the effects of the SWE program on employment outcomes. In this observational study, we divided the participants into two groups according to whether they participated in the SWE program. Because this study did not involve random assignment of participants to groups, we used propensity score matching (Rosenbaum & Rubin, 1983) to adjust for potential confounding variables and minimize bias due to self-selection into the intervention. The propensity score matching procedure allowed us to create comparable groups by matching participants on a single value representing a set of baseline covariates (Lamm et al., 2019; Rubin, 2001).

2.4 Variables

2.4.1 Covariates

We identified a set of covariates for inclusion in the propensity score model based on factors associated with self-selection into the SWE program and previous research on predictors of employment outcomes for transition-age youth and VR consumers with B/LV (Lund & Cmar, 2019, 2020). Following guidelines for propensity score model specification (Heinrich et al., 2010), all covariates represented stable participant characteristics or were measured at VR application to ensure that participation in the intervention did not affect the covariates.

Age (in years) was a continuous variable, and gender was a dichotomous variable (0 = *male*, 1 = *female*). All remaining variables were dichotomous (0 = *no*, 1 = *yes*). Race had three categories: White, Black/African American, and other. Geographical area was based on the individual's zip code of residence and had three categories: Metropolitan Statistical Area (has at least one urban area with 50,000 or more residents), Micropolitan Statistical Area (has at least one urban cluster with 10,000 to 49,999 residents), and outside Core-Based Statistical Areas

(does not meet criteria for Metropolitan or Micropolitan Statistical Area; U.S. Office of

Management and Budget, 2010). Education had four categories: less than high school; high

school diploma or equivalent; some college, no degree; and Associate degree or higher.

We classified individuals into four mutually exclusive sensory disability categories:

totally blind, legally blind, other visual impairment, and deaf-blind. The *totally blind* category

included individuals who could not read print in any form with aids or devices. The *legally blind*

category included individuals with best-corrected vision in both eyes of not more than 20/200 or

less than a 20-degree visual field. The *other visual impairment* category included individuals

who had a less severe visual impairment. The *deaf-blind* category included individuals with deaf-

blindness and individuals with blindness/visual impairment plus deafness, hearing loss, or other

hearing impairment.

Four variables indicated whether individuals had any of the following additional

disabilities: cognitive impairment, psychosocial impairment, orthopedic impairment, and

communicative impairment. Psychosocial impairments included interpersonal and behavioral

impairments, difficulty coping, and other mental impairments. Orthopedic impairments included

orthopedic/neurological impairments (mobility, manipulation/dexterity, or both) and other

orthopedic impairments. VR application year had four categories: 2002-2006, 2007-2011, 2012-

2016, and 2017-2020. Additional variables were SSDI receipt, SSI receipt, supported

employment goal, personal income as primary source of support, and employment at application.

2.4.2 Outcomes

Three variables represented employment outcomes at VR case closure: competitive

employment, work hours, and hourly earnings. Competitive employment was a dichotomous

variable (0 = *no*, 1 = *yes*), defined as working for an employer in an integrated setting (with or

without supports), being self-employed, or working in the Business Enterprise Program, and making at least the federal minimum wage. Work hours was a continuous variable, defined as the number of hours individuals worked for pay in a typical week. Hourly earnings was also a continuous variable, calculated by dividing individuals' weekly earnings by their weekly work hours. Participants' case closure dates spanned multiple years, with earnings reported for 2009-2021. To adjust for inflation across these years, we used the Consumer Price Index for All Urban Consumers to convert earnings for 2010-2021 to 2009 dollars using established formulas (U.S. Bureau of Labor Statistics, n.d.).

2.5 Data Analysis

We computed descriptive statistics and standardized mean differences for the covariates to examine differences in baseline characteristics between SWE participants and non-participants. We estimated propensity scores for all participants in the sample by fitting a logistic regression model through PROC PSMATCH in SAS 9.4. The propensity score represents the predicted probability of SWE participation based on the baseline covariates. The model included all covariates described in the previous section plus age squared. We then matched each SWE participant with a similar comparison participant based on the difference in the logit of the propensity score using optimal one-to-one matching with a 0.20 caliper constraint.

To assess covariate balance in the matched sample, we evaluated the standardized difference in the logit of the propensity scores, compared means and standardized mean differences for each covariate, and examined visual balance diagnostics (i.e., bar charts, box plots, and cumulative distribution plots). We used an upper limit of 0.20 in absolute standardized mean differences to indicate adequate balance (Cohen, 1988; Rosenbaum & Rubin, 1985). Following best practices for propensity score matching (Rubin, 2001; Stuart & Rubin, 2008), we

completed all steps of the propensity score matching process without the outcome variables to ensure clear separation between the design and analysis phases of the study.

After finalizing the matches, we added the outcome variables to the dataset and estimated the impact of the SWE program for SWE participants (i.e., average treatment effect for the treated, or ATT) by assessing differences in outcomes between the two groups. We conducted a chi-square analysis to examine the relationship between SWE participation and competitive employment rates at VR case closure. We used independent samples t tests to compare work hours and hourly earnings of competitively employed individuals in each group.

3. Results

Of the 838 individuals in the sample, 18.0% ($n = 151$) participated in the SWE program. Table 2 provides descriptive statistics and standardized mean differences by SWE participation for the full sample, and Figure 1 illustrates the number of participants at each stage of the analysis. Before matching, several baseline covariates were unbalanced, as indicated by standardized mean differences that exceeded 0.20. Compared to non-participants, SWE participants were younger; had lower levels of education; and had lower rates of SSDI receipt, financial self-support, and employment at application. SWE participants were more likely to apply to VR in 2007-2016 than non-participants, and non-participants were more likely to apply in 2002-2006 and 2017-2020 than SWE participants.

The distribution of propensity scores for each group had substantial overlap and adequate common support; propensity scores ranged from 0 to 0.81 for SWE participants and from 0 to 0.86 for non-participants. The standardized difference in the logit of the propensity scores for the full sample was 1.49. The matching procedure resulted in 151 matched pairs; each SWE participant was successfully matched with a suitable non-participant. The standardized difference

in the logit of the propensity scores was reduced to 0.06 for the matched sample. After matching,

the intervention and comparison groups had equivalent values on all baseline covariates (see

Table 3). The standardized mean differences for the covariates ranged from 0 to 0.08, indicating

adequate balance across groups.

The competitive employment rate at VR case closure was 60.9% ($n = 92$) for the

intervention group and 45.7% ($n = 69$) for the comparison group. Competitive employment rates

differed significantly by SWE participation, $x^2(1, N = 302) = 7.04$, $p = .008$. The odds of

competitive employment were 1.85 times higher for the intervention group than the comparison

group, $OR = 1.85$, 95% CI [1.17, 2.93]. Work hours did not differ significantly between

competitively employed participants in the intervention group ($M = 33.04$, $SD = 8.69$) and

comparison group ($M = 32.74$, $SD = 8.99$), $t(159) = -0.22$, $p = .829$, $d = 0.03$. Similarly, hourly

earnings for the intervention group ($M = 9.74$, $SD = 4.21$) and comparison group ($M = 10.10$, SD

$= 6.16$) did not differ significantly, $t(113.51) = 0.42$, $p = .678$, $d = 0.07$.

4. Discussion

The purpose of this study was to evaluate the impact of a VR-sponsored summer work

experience program, SWE, on employment outcomes for youth who are B/LV. We utilized

propensity score matching to create equivalent groups that differed only on SWE participation.

Limited evidence has been available regarding the effectiveness of sponsored work experiences

for youth who are B/LV, and this study is the first published empirical evaluation of a VR-

sponsored work experience program for this population. Our findings support the effectiveness

of a short-term paid summer work experience in improving competitive employment for youth

with B/LV who receive VR services.

We found that only 18% of youth in our sample who met eligibility criteria participated in SWE. Consumers who participated in SWE differed from non-participants in several ways, including being younger, less educated at application, less likely to be employed at application, more likely to apply for services between 2007 and 2016, and less likely to apply during other periods. Reasons for such a relatively low percentage of eligible consumers participating in this program are unknown, but lower participation for consumers who applied between 2017 and 2020 may be associated with the availability of several other summer program options that ADRS added in response to WIOA.

We found that participation in the SWE program was associated with a greater likelihood of obtaining competitive employment at case closure. Although the effect was small, it is notable given the relatively short duration of the work experience (6 weeks) and the lag between intervention and outcomes (i.e., the time of participation was not necessarily close to the time of case closure – the lag averaged 3.7 years). The value of longer work experiences has been documented for youth with B/LV (McDonnall & O'Mally, 2012), and our findings support the value of even short-term sponsored work experiences for this population. We cannot be certain how such a short program that does not incorporate other services had an impact on employment, although a previous study provided evidence that job search self-efficacy increased as a result of participation in the SWE program (Cmar & McDonnall, 2021). Perhaps this increase in job search self-efficacy resulted in greater success at obtaining a job later, as suggested by other research (Liu et al., 2014).

Our results differ from the limited previous research that evaluated the effectiveness of VR-sponsored work experience programs, as participation in other programs was not associated with a higher likelihood of obtaining employment at case closure (Clause, n.d.; Osmani, 2020).

A major difference between our study and these prior studies is the population. This study focused only on youth with B/LV, while the other studies included all youth with disabilities served by the agencies. The characteristics of the programs may also differ. Little information was provided about Missouri VR's summer work experience program, other than that it was available to a more restricted group of youth (i.e., those entering their final year of high school; Clause, n.d.). Oklahoma VR's iJobs program appears to be similar to SWE, although it incorporated additional components, and their School Work Study program lasted 24 months compared to 6 weeks for SWE (Osmani, 2020). Perhaps the similarity of ADRS' SWE program to a paid summer job contributed to its success. In fact, many SWE participants did not understand that their summer work experience sponsored by ADRS was not an actual job, which may explain their increase in job search outcomes self-efficacy (Cmar & McDonnall, 2021). Methodological approaches to the studies also differed, with the present study utilizing a more rigorous analytic approach than the regression procedures used by the previous studies.

Although SWE had a positive impact on obtaining competitive employment, it was not associated with greater work hours or higher hourly earnings for employed participants. In previous studies of the effectiveness of work experience programs, findings regarding work hours and earnings have been mixed. Wehman et al. (2017) did not find differences in earnings or work hours for Project SEARCH+ASD participants versus the control group when considering only those who were employed at follow-up. Sattar (2010) documented that 4 of 8 youth work experience programs demonstrated positive effects on earnings, and 4 of 6 programs demonstrated positive effects on work hours; however, all of those programs were intensive and involved much more than a work experience. Our findings suggest that a short-term work experience can help youth with B/LV obtain a job in the future but may not positively impact the

quality of that job. Recent research documented that few VR services are associated with job

quality for VR consumers with B/LV (McDonnall et al., 2021), although many are associated

with obtaining employment (Lund & Cmar, 2019).

4.1 Limitations

Several limitations are important to recognize when interpreting our findings. Although

we utilized propensity score matching to minimize selection bias, this study was observational

rather than experimental, so we cannot draw firm conclusions about causality. After propensity

score matching, the intervention and comparison groups were equivalent on measured baseline

covariates; however, the groups may differ on unmeasured variables that were not available in

the administrative dataset. For example, motivation to work and difficulty finding a job may

influence youths' decisions to enroll in a work experience program. It may be valuable to

consider these variables when matching participants in future evaluations of work experience

programs. Additionally, the average VR case length for participants in the matched sample was

5.73 years ($SD = 2.63$, $Mdn = 5.39$). The SWE program is only one of many services participants

received during those years that may be associated with their employment outcomes. Finally,

because this study focused on one VR agency's program for youth who are B/LV, the findings

may not generalize to other disability populations, states, agencies, and work experience

programs.

4.2 Implications for Research and Practice

Despite these limitations, several implications for research and practice were evident

from this study. Our findings substantiate the importance of paid community-based work

experiences for improving future employment outcomes for youth with B/LV and support paid

work experience as a key component of work-based learning for this population. However, much

more work is needed to establish a full understanding of the nuanced relationship between early

work experiences and later employment for B/LV youth. Given the narrow focus of this study

(i.e., one program, one state) and the limited previous research on sponsored work experiences

for this population, replicating this study with data from other states and programs would be an

important step in clarifying and extending our findings and assessing their generalizability.

Considering the increase in the provision of work experiences to youth with disabilities (U.S.

Government Accountability Office, 2018) and the variation in the implementation of work-based

learning across agencies following WIOA (Honeycutt et al., 2019; Taylor et al., 2021), it would

be useful to evaluate different work experience programs for youth with B/LV to determine if

effective programs share any common characteristics or components. Further research is also

needed to examine the effectiveness of various programs by youth characteristics, such as age,

level of vision, and additional disabilities.

From an implementation perspective, work-based learning activities may be more

resource-intensive than the other pre-ETS activities (Miller et al., 2018). In particular, work

experiences require extensive planning and coordination, including communication with

employers in the community. ADRS' SWE program relies on strong partnerships with other

agencies in the state, which may contribute to its sustainability. Using a similar collaborative

approach between VR agencies, schools, and CRPs could be beneficial for implementing and

expanding youth work experience programs. This approach provides an opportunity to delineate

program roles and responsibilities according to agency strengths and resources. Involving youth

in the process of finding their own work experience placements may be another advantageous

approach to program implementation. In addition to reducing the amount of staff time needed to

find placements for youth, this approach can serve as a bridge between a work experience and a

non-sponsored job by helping youth develop job-seeking skills and preparing them to search for

a job after completion of their work experience (Cmar & McDonnall, 2021).

The low rate of SWE enrollment in our sample warrants additional consideration. Given

the array of summer programs, camps, and other activities available to transition-age youth,

participating in a work experience program may not be their top priority. Other factors may

interfere with work experience program participation, including summer vacations, caring for

siblings, lack of transportation, and concerns about losing SSI benefits. Service providers can

work with youth and their families to identify barriers to participation and develop strategies to

address them. Some youth in this age range may need to focus on concept and skill development

through workplace readiness training and other work-based learning activities (e.g., job

shadowing, volunteering) before participating in a paid work experience. Various models for

providing work-based learning and other pre-ETS in a sequential manner according to youths'

ages and experiences have been discussed in the literature (Cease-Cook et al., 2015; Cmar &

McDonnall, 2019; Miller et al., 2018). Evaluating the effectiveness of these models for youth

with B/LV would be another worthwhile avenue for further investigation.

5. Conclusion

The present study represents the first known investigation of a VR-sponsored work

experience program for transition-age youth who are B/LV. Using propensity score matching to

control for potential confounders, we documented a higher competitive employment rate for

SWE participants than non-participants at VR case closure. These results contribute to the body

of evidence supporting the link between early paid work experiences and future employment for

B/LV youth. Although these findings are positive, they have limited generalizability. Therefore,

evaluating the effectiveness of other work experience programs for youth with B/LV would be

an important extension of this study. Additional research is also needed to identify other

interventions that result in improved employment outcomes for this population (Cavenaugh &

Giesen, 2012).

6. Acknowledgements

The authors wish to thank Michael Quinn and Ashley Townsend for providing the data for the

study and feedback on the manuscript.

7. Conflict of Interest

The authors declare that they have no conflict of interest.

8. Funding

The contents of this manuscript were developed under a grant from the U.S. Department of

Health and Human Services, NIDILRR grant 90RT5040-01-00. However, these contents do not

necessarily represent the policy of the Department of Health and Human Services and should not

indicate endorsement by the Federal Government.

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Table 1

Demographic Characteristics of the Sample

Variable	*n*	%
Race		
White	502	59.9
Black or African American	325	38.8
Other	11	1.3
Education		
Less than high school	520	62.1
High school diploma or equivalent	195	23.3
Some college, no degree	96	11.5
Associate degree or higher	27	3.2
Sensory disability category		
Totally blind	70	8.4
Legally blind	292	34.8
Other visual impairment	416	49.6
Deaf-blind	60	7.2
Additional disabilities		
Cognitive impairment	91	10.9
Psychosocial impairment	73	8.7
Orthopedic impairment	48	5.7
Communicative impairment	12	1.4
Supported employment goal	37	4.4
Personal income as primary source of support	61	7.3

Note. $N = 838$. Variables measured at vocational rehabilitation application.

Table 2

Baseline Covariates by Group Before Propensity Score Matching

Variable	Intervention (*n* = 151)		Comparison (*n* = 687)		SMD
	M	*SD*	*M*	*SD*	
Age	16.23	1.37	19.01	2.89	**1.23**
Female gender	0.50	0.50	0.45	0.50	0.12
Race					
White	0.58	0.49	0.60	0.49	0.04
Black or African American	0.40	0.49	0.39	0.49	0.02
Other	0.02	0.14	0.01	0.11	0.07
Geographical area					
Metropolitan Statistical Area	0.74	0.44	0.74	0.44	0.02
Micropolitan Statistical Area	0.18	0.38	0.17	0.38	0.02
Outside CBSA	0.09	0.28	0.09	0.28	0.00
Education					
Less than high school	0.89	0.31	0.56	0.50	**0.81**
High school diploma or equivalent	0.07	0.25	0.27	0.44	**0.56**
Some college, no degree	0.03	0.16	0.13	0.34	**0.40**
Associate degree or higher	0.01	0.11	0.04	0.19	0.15
Sensory disability category					
Totally blind	0.07	0.25	0.09	0.28	0.08
Legally blind	0.42	0.50	0.33	0.47	0.19
Other visual impairment	0.47	0.50	0.50	0.50	0.06
Deaf-blind	0.04	0.20	0.08	0.27	0.17
Additional disabilities					
Cognitive impairment	0.11	0.32	0.11	0.31	0.02
Psychosocial impairment	0.09	0.29	0.09	0.28	0.02
Orthopedic impairment	0.06	0.24	0.06	0.23	0.01
Communicative impairment	0.03	0.16	0.01	0.11	0.11
VR application year					
2002-2006	0.11	0.31	0.30	0.46	**0.49**
2007-2011	0.52	0.50	0.38	0.49	**0.28**
2012-2016	0.36	0.48	0.25	0.43	**0.23**
2017-2020	0.02	0.14	0.07	0.26	**0.26**
SSDI receipt	0.04	0.20	0.09	0.29	**0.21**
SSI receipt	0.36	0.48	0.36	0.48	0.00
Supported employment goal	0.05	0.21	0.04	0.20	0.01
Personal income as primary source of support	0.01	0.11	0.09	0.28	**0.34**
Employment at application	0.03	0.16	0.11	0.32	**0.34**

Note. SMD = standardized mean difference. CBSA = Core-Based Statistical Areas.
VR = vocational rehabilitation. SSDI = Social Security Disability Insurance. SSI =
Supplemental Security Income. Bold values indicate unbalanced covariates.

Table 3

Baseline Covariates by Group After Propensity Score Matching

Variable	Intervention (*n* = 151)		Comparison (*n* = 151)		SMD
	M	*SD*	*M*	*SD*	
Age	16.23	1.37	16.40	1.41	0.07
Female gender	0.50	0.50	0.51	0.50	0.01
Race					
White	0.58	0.49	0.60	0.49	0.04
Black or African American	0.40	0.49	0.38	0.49	0.04
Other	0.02	0.14	0.02	0.14	0.00
Geographical area					
Metropolitan Statistical Area	0.74	0.44	0.75	0.43	0.05
Micropolitan Statistical Area	0.18	0.38	0.16	0.37	0.05
Outside CBSA	0.09	0.28	0.09	0.28	0.00
Education					
Less than high school	0.89	0.31	0.89	0.32	0.02
High school diploma or equivalent	0.07	0.25	0.07	0.25	0.00
Some college, no degree	0.03	0.16	0.03	0.16	0.00
Associate degree or higher	0.01	0.11	0.02	0.14	0.04
Visual impairment category					
Totally blind	0.07	0.25	0.06	0.24	0.02
Legally blind	0.42	0.50	0.39	0.49	0.07
Other visual impairment	0.47	0.50	0.50	0.50	0.05
Deaf-blind	0.04	0.20	0.05	0.22	0.06
Additional disabilities					
Cognitive impairment	0.11	0.32	0.10	0.30	0.04
Psychosocial impairment	0.09	0.29	0.08	0.27	0.05
Orthopedic impairment	0.06	0.24	0.04	0.20	0.08
Communicative impairment	0.03	0.16	0.03	0.18	0.05
VR application year					
2002-2006	0.11	0.31	0.11	0.31	0.00
2007-2011	0.52	0.50	0.50	0.50	0.03
2012-2016	0.36	0.48	0.36	0.48	0.00
2017-2020	0.02	0.14	0.03	0.18	0.06
SSDI receipt	0.04	0.20	0.03	0.16	0.05
SSI receipt	0.36	0.48	0.33	0.47	0.06
Supported employment goal	0.05	0.21	0.06	0.24	0.06
Personal income as primary source of support	0.01	0.11	0.01	0.08	0.03
Employment at application	0.03	0.16	0.03	0.16	0.00

Note. SMD = standardized mean difference. CBSA = Core-Based Statistical Areas. VR = vocational rehabilitation. SSDI = Social Security Disability Insurance. SSI = Supplemental Security Income.

Figure 1

Flowchart of Participants
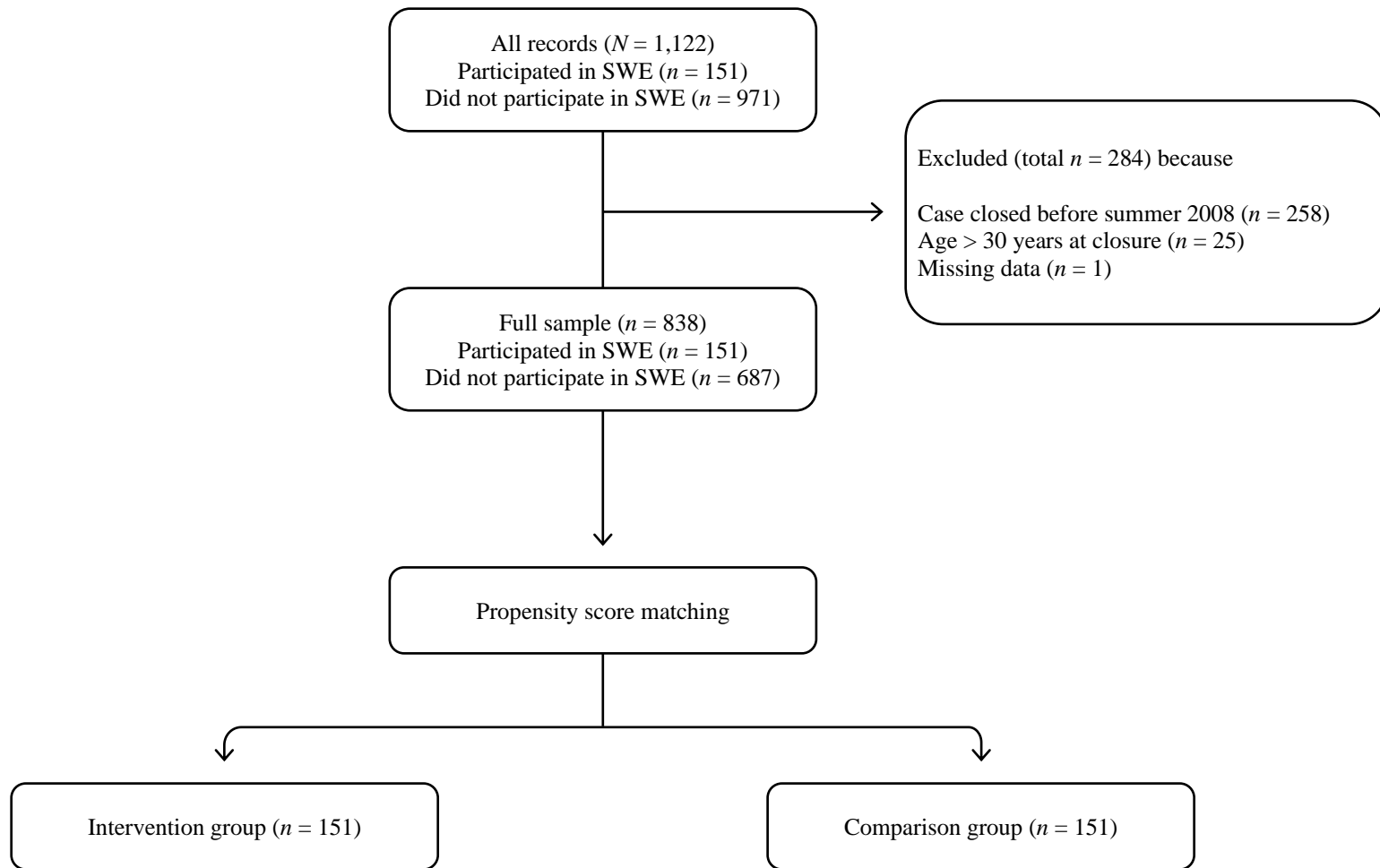
Note. SWE = Summer Work Experience.