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Increasing Successful Employment Outcomes for Individuals with Psychiatric Disabilities with On-the-Job Training

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The Individual Placement and Support (IPS) model of supported employment is an evidenced-based practice that is highly effective at helping people with psychiatric disabilities to obtain gainful employment. Within the State Vocational Rehabilitation (VR) system, the On-the-Job Training (OJT) service supports the rapid placement, client choice, competitive work, disclosure, and follow-along support components of the IPS model. We reviewed the Rehabilitation Services Administration (RSA) 911 data for fiscal years 2015 and 2016 to examine California's utilization of RSA Title I funds to provide the OJT service and examined the employment outcomes for individuals with psychiatric disabilities who utilized this service. We found that OJT, although highly effective (71.4% successfully employed), was underutilized (N=14,384, n=105). Furthermore, in an analysis of individuals with serious psychiatric disabilities (as indicated by receipt of Social Security Administration [SSA] disability benefits at application, coded as significantly or most significantly disabled, and coded with a primary psychiatric disability), 59.3% of the OJT clients were employed, compared to 15.4% of the non-OJT clients ($\chi^2 = 10.85$, $p < .01$). We provide a number of recommendations to both enhance the use of OJT services and improve employment outcomes for this population.

Keywords: Individual Placement and Support (IPS), Vocational Rehabilitation, Supported Employment, People with Severe Mental Illness, Psychiatric Disabilities

Traditional Vocational Rehabilitation (VR) services have followed a "train and place" approach which has included a systematic process of vocational assessment, followed by vocational training, followed by job placement (Rubin et al., 2016). Researchers have demonstrated that traditional VR services are not meeting the needs of individuals with psychiatric disabilities and have recommended the integration of evidence-based approaches for this population in VR service-delivery (Ackerman & McReynolds, 2005; Leahy et al., 2016; Rosenthal et al., 2007; Salzer et al., 2011). The evidence-based Individual Placement and Support (IPS) model uses a "place and train" approach where individuals with disabilities receive training on the job (Dowler & Walls, 2014; Twamley et al., 2008; Twamley et al., 2012). IPS is a type of individualized supported employment that emphasizes rapid job search and continued support for VR clients after obtaining a competitive job in an integrated setting with other individuals who do not have disabilities. IPS specialists help clients start looking for jobs within one month of starting the program. The basic tenets of IPS include competitive employment, rapid job search, integration of vocational and mental health services, benefits counseling, and time unlimited individual support (Bond, 2016; Dowler & Walls, 2014; Drake, Bond, & Becker, 2012; Drake et al., 2016; Luciano et al., 2013).

Research on IPS provides evidence of its superiority in employment outcomes compared to other VR services and has been shown to be effective for individuals with serious mental illness (Dowler & Walls, 2014). In studies that examined the efficacy of IPS for individuals with schizophrenia, researchers found that individuals who received the service were more likely to obtain competitive and full-time employment than those who did not receive IPS, and those who received IPS also secured employment at a faster rate (Twamley et at., 2008; Twamley et al., 2012). Based on the results from the study by Twamley et al. (2012), 57% of IPS participants obtained competitive work compared to 29% of those who received traditional "train and place" VR services. Seventy percent of IPS participants acquired paid positions compared to 36% of the participants that received traditional VR services. Clients who received IPS had significantly higher earnings and worked more hours. These researchers provided evidence that IPS is more effective in increasing employment for individuals with psychiatric disabilities (Davis et al., 2018; Larson et al., 2007; Twamley et al., 2012).

When comparing traditional VR services to IPS, the IPS model emerges as a superior approach to assisting individuals with psychiatric disabilities to obtain consistent and desirable vocational outcomes in terms of higher employment rates and higher wages for the individuals who receive supported employment services under this approach (Davis et al., 2018; Larson et al., 2007; Twamley et al., 2012). Research has shown that individuals receiving the IPS model of supported employment have better employment outcomes despite the effects of other factors such as diagnosis, prior work history, comorbid physical or developmental disabilities, and receipt of disability income support (Cook et. al., 2005). However, regardless of the supporting evidence for its effectiveness and desirable employment outcomes, the IPS model continues to be underutilized (Drake et al., 2016; Marrone et al., 2014). It stands to reason that over a third of individuals with a serious mental illness have annual incomes below $10,000, and only about 10% of individuals with a serious mental illness are employed full time (Karakus et al., 2011; Luciano & Meara, 2014).

Infusing IPS model practices within the VR service-delivery system has the potential to significantly improve employment rates and income levels for individuals living with serious mental illness.

The On-the-Job Training Service and the IPS Model of Supported Employment

In the State-Federal VR system, eligibility for job placement is determined based on disability and the potential for employment. All services are individualized. Counselors and clients work together to establish an Individualized Plan for Employment (IPE) that takes the client's interests and abilities into account, and identifies the services and supports needed to obtain employment (Department of Rehabilitation [DOR], 2016). IPEs may include vocational training, job placement, on the job training (OJT), benefits counseling, transportation services, technology, and other services specifically related to the individual's disability and preferences.

The purpose of providing the OJT service is to help individuals with disabilities obtain competitive employment, using the "place and train" approach. OJT is a rapid-placement service that involves the counselor writing a contract with an employer who then provides training on the job for the client. This training is provided for the length of time and dollar amount determined by the counselor, client, and employer. The contract is not legally binding; however, the employer agrees to hire the client and retain them as their regular employee after the OJT service ends. The individual is hired as a regular employee and receives the same wages and benefits as other employees in the same position (California Code of Regulations [CCR], 2019b).

The OJT service is rarely used. Less than 1% of the individuals with psychiatric disabilities whose cases were closed during federal fiscal years 2015 and 2016 at the California Department of Rehabilitation (DOR) received this service as part of their IPE (see Table 1). This trend was found to be consistent with national data regarding the use of OJT service with this population which was 1.5% (RSA, 2016).

Table 1

DOR Cases Closed During RSA-911 Federal Fiscal Years 2015 and 2016

Total DOR cases closed, all disabilities	73,526
Total cases where primary disability was a psychiatric disability*	22,989
Total psychiatric disability cases closed after receiving IPE services	14,384
Total psychiatric disability cases closed successfully employed	7,041
Overall success ratio for psychiatric disability cases: 7,041/14,384	49%
Total psychiatric disability cases with OJT service	105
Total psychiatric disability cases with OJT service closed successfully employed	75
Success ratio for psychiatric disability cases with OJT service: 75/105	71.4%
OJT cases where the individual had a serious psychiatric disability**	27
Total serious psychiatric disability OJT cases closed successfully	16
Success ratio for serious psychiatric disability OJT cases: 16/27	59.3%

Notes: ** coded as Depression or other Mood Disorder: 47%, Schizophrenia: 18%, Anxiety Disorder:12%, Drug Abuse: 10%, Other Mental Illness: 6%, Alcohol Abuse: 5%, Personality Disorder: 2%, Eating Disorder: < 0.1%; ** receipt of SSI / SSDI and a DOR significance of disability score of 1 or 2 at application indicates that the individual had a serious psychiatric disability*

California DOR and the IPS Model

RSA-911 data from California DOR was utilized for this study for several reasons including the ability to formulate an adequate sample size for analysis, state regulatory codes regarding the OJT service, additional IPS model services available specifically within the DOR service-delivery system, and the established use of the IPS model in county employment agencies that partner with DOR to serve clients with psychiatric disabilities. California DOR is the largest state VR agency in the country in terms of annual budget and the number of individuals served (Department of Education [DOE], 2020). The California RSA-911 data set allowed for the largest sample size available for this study, given the small numbers of individuals who received the OJT service nationally.

OJT Regulations. The federal regulations describing opportunities for work-based learning experiences for individuals with disabilities and employer incentives do not specifically address details of the OJT service, training curriculum, and funding (Federal Code of Regulations [FCR], 2019). California has developed a clear, concise description of an OJT service agreement in their state regulations which mandates the inclusion of a detailed training curriculum, the specific skills to be learned, the number of hours of instruction and supervision to be provided by a qualified instructor, the hours of training, break times, wages paid to the employee, training fees that DOR agrees to pay to the trainer, a description of any accommodations required to meet the special needs of the client, and identification of the party responsible for providing each accommodation during the training period (CCR, 2019b).

Benefits Counseling. California DOR recently implemented a program to provide in-house benefits counseling services, which is a major tenet of the IPS model (DOR, 2020). DOR has dedicated Work Incentive Planner (WIP) staff as part of their service-delivery team in each of their 13 regional districts that are dedicated solely to providing DOR clients with information on how work will impact their Social Security Administration (SSA) disability and other public benefits. The WIPs are available to explain the financial incentives that are available to support individuals as they transition

from unemployment and reliance on public benefits to gainful employment and greater independence in their communities.

Capturing IPS Model Elements in the RSA-911 Data. Many employment programs funded by county behavioral health programs that may partner with DOR to serve individuals with psychiatric disabilities have implemented the IPS model into their service-delivery systems (California Association of Local Behavioral Health Boards and Commissions, 2020; IPS Finder, 2020). However, use of the IPS approach is not specifically captured in the RSA-911 data when the service provided by staff in these county-funded programs is coded as a general job placement service and the client's plan for employment does not specifically include a DOR-funded OJT service.

Additional IPS model services may or may not be captured in RSA-911 data. Benefits counseling is captured as a variable in the RSA-911 data set. However, the WIP program was not implemented statewide in California until 2016, so generally this service was not captured in the RSA-911 data that was used for this analysis. Details in the IPE document developed by the DOR counselor and client may not be captured in the RSA-911 data unless funds are spent and the service and/or dollar amounts are captured in the service-delivery variables available in the RSA-911 data set. Although the IPS model stresses rapid job search, VR system delivery allows up to 60 days for eligibility determination and an additional 90 days for IPE development. Although these timeframes are captured for each individual case, these variables were not included in this analysis due to the focus on the OJT service which is the service that is the most prominent in supporting the IPS model within the VR service-delivery system.

The OJT service both supports the IPS model and offers employers a financial incentive to hire individuals with serious psychiatric disabilities. The intention of this paper is to link the OJT service within the VR service-delivery system with the IPS model. As the OJT service becomes utilized more frequently within this system, future studies can track additional elements such as benefits counseling, the timeframe from application to IPE development, and other specific elements available in the RSA-911 data set and in VR agency case management system data. VR agency case management data may include more detailed information about specific services included in the IPE, for example.

Overall, these researchers felt that analyzing cases in the California DOR RSA-911 data and focusing specifically on the OJT service was the best choice given all factors to provide helpful information regarding use of IPS model supported employment services within the VR service-delivery system, rather than utilizing a wider range of variables from the complete national RSA-911 data set. VR service-delivery varies substantially from state to state, regulations regarding the specific OJT service are inconsistent from state to state, and the authors of this study chose to use the VR state agency that they had experience with and knowledge of the intricacies of service-delivery, regulations, and factors related to specific services for individuals with psychiatric disabilities. California DOR data was the best choice for analysis of the OJT service due to the relatively larger numbers of cases receiving the OJT service, discussion of IPS model services within the VR service-delivery system, and recommendations to promote the use of the OJT service to both capture IPS model services in the RSA-911 data and to offer the OJT service as a financial incentive to employers to hire individuals with psychiatric disabilities.

Specific Aspects of the IPS Model Available in the DOR System

All eight principles of the IPS model (Drake et al., 2012; IPS Employment Center, 2019) can be incorporated into the IPE within the DOR service delivery system as follows:

1. **Competitive employment**. The goal of the IPE is competitive paid employment in the community.
2. **Eligibility based on client choice**. The IPE process is fully dependent on the preferences of the client.
3. **Integration of rehabilitation and mental health services.** Within the IPE, the counselor may coordinate job placement, medical and mental health service, and other individualized integrated support services necessary for the client to obtain and maintain employment.

4. **Attention to worker preferences**. The client chooses the job. The IPE may list any professional of the client's choice who will provide mental health counseling and clinical strategies to promote medication adherence, support abstinence from substance use, and support continuing recovery.
5. **Rapid job search.** The counselor and client together initiate the use of a rapid job search approach and immediate implementation of the IPE to help job seeking clients obtain employment immediately, rather than providing lengthy pre-employment assessment, training, and counseling. IPS specialists and job developers help clients start looking for jobs within one month of starting their program.
6. **Systematic job development.** The IPE may outline the expectation that DOR contracted IPS specialists and job developers build relationships with employers to learn about the employers' needs in order to identify qualified job candidates. IPS specialists and job developers make multiple visits to the same employers to develop these relationships and average six meetings directly with hiring managers in the community per week that are client-specific. The maximum caseload for any full-time employment specialist is 20 or fewer clients to ensure that clients receive rapid, individualized job placement assistance.
7. **Time-unlimited and individualized support.** The IPE may indicate the use of post-employment services for follow-up services. Programs in the community that offer IPS services typically partner with county mental health programs and DOR, and these integrated services may all be outlined in the IPE. The DOR counselor assists the client in formulating the IPE, in recommending IPE service providers, detailing timeframes, and describes how each service will be funded by either DOR Title 1 funds or another available similar benefit funding source (CCR, 2019a; Family Advocates for IPS Committee, 2019).
8. **Personalized benefits counseling.** The services of the in-house benefits counselor, otherwise known as the Work Incentives Planner (WIP), is included in the IPE.

Because many individuals with serious mental illness receive SSA disability benefits, it is imperative that benefits counseling be included in the IPE to assist individuals to successfully navigate this benefits system once they begin earning additional income. In addition to research on the IPS model, additional authors have stressed the importance of this valuable service.

Social Security Work Incentives and Other Benefits Counseling

Research on psychiatric disabilities has shown that benefits counseling greatly impacts employment outcomes. Drake et al. (2016) found that individuals with psychiatric disabilities view employment as a primary treatment goal and supported employment as a critical intervention that enables them to find and succeed in satisfying jobs. Despite individuals with psychiatric disabilities identifying work as crucial to their recovery, these authors noted that the majority of individuals with psychiatric disabilities remain unemployed and dependent on government assistance. Disincentives to work include the requirement of extended separation from the workforce as the first step in the eligibility process for SSA disability benefits, fear of losing monthly benefit payments and health insurance, and fear of overpayments of benefits that SSA eventually requires payback for. Individuals may also be apprehensive about navigating the complicated maze of programs, work incentives, and special rules outlined in SSA's 60-page Red Book (SSA, 2019b). These disincentives lead individuals with psychiatric disabilities to avoid paid employment at a level that will impact their benefits (Olney et al., 2014).

Nazarov (2016) also suggested that individuals with psychiatric disabilities be provided benefits counseling in order to successfully navigate the benefits system. Nazarov (2016) found that benefits counseling services can increase the probability of successful case closure by 5.2%. They also found that individuals who received benefits counseling increased their earnings and working hours by $4.42 and 3.3 hours per week and managed to make an average of $0.59 per hour more than those who did not receive benefits counseling. Nazarov (2016) concluded that providing individuals with a combination of benefits counseling and supportive employment services is the most beneficial approach and helps individuals work toward financial independence.

Additional researchers had similar findings in their analysis of individuals with psychiatric disabilities who participated in interventions to assist them to gain employment (Gruman et al., 2014). In their analysis, one group received benefits counseling only, another group received VR services only, and a third group received a combination of benefits counseling and VR services. These researchers found that the individuals that received a combination of benefits counseling and VR services were more likely to be employed post-intervention than those that received either VR or benefits counseling only. The individuals that received the combination of benefits counseling and VR services also experienced a significant increase in quarterly wages immediately and two years post-intervention compared to the other two groups that received either benefits counseling or VR services only (Gruman et al., 2014).

A tenet of the IPS model is to provide benefits planning services in conjunction with supported employment services. DOR has staff specifically dedicated to providing benefits counseling for clients who need this support, and the DOR provides access to these aforementioned WIPs statewide (DOR, 2020). WIPs help provide intensive, individualized services to help clients understand how employment will affect their SSA disability benefits. WIPs provide training on the impact of employment on cash and health benefits. They help develop accurate and individualized benefits analyses and work incentive plans. WIPs are in charge of explaining viable options and recommendations for various work incentive programs. WIPs also provide support with wage reporting and benefits management and coordinate referrals on DOR case closure to Work Incentive Planning and Assistance (WIPA) projects and Employment Networks (ENs). Current recipients of SSI and SSDI who are in job ready status are all eligible for these services (DOR, 2020).

Purpose

The purpose of this paper is to show that outcomes for individuals with serious psychiatric disabilities who received the OJT service in a state VR system are very similar to outcomes for individuals with serious mental illness served with IPS supported employment model services. The IPS model has been researched over the past 20 years. However, this model has not been fully incorporated into VR service-delivery. This is the main point of our article. Additionally, the purpose of this paper is to describe how elements of the IPS model currently exist in the VR service delivery system, and to describe primarily how the OJT service supports the rapid placement, client choice, competitive work, disclosure, and follow-along support components of the IPS model. Because such a small number of cases can be identified where the individual has a serious mental illness and received an OJT service, we are very limited in our ability to provide additional analyses. Our main intention is to show that the OJT service is effective for individuals with serious mental illness regardless of other demographic variables. We are trying to encourage those in VR agencies to use the OJT service more often with individuals with serious mental illness.

Research Question

What is the effect of receiving the OJT service on employment outcomes for individuals with serious psychiatric disabilities at DOR as compared to individuals with serious psychiatric disabilities who receive the traditional "train and place" services? We hypothesized that receiving the OJT service at DOR would result in a greater likelihood of successful employment for clients with serious psychiatric disabilities.

Method

Participants

A secondary data analysis using the RSA-911 data set was conducted. Researchers used a merged data set of all clients tracked in the RSA-911 aggregate data set for Federal Fiscal Years 2015 and 2016 in the California State VR Agency, the DOR. A total of 73,526 cases were closed by the DOR during these two combined fiscal years. Of these cases, a total of 14,384 were clients with a primary diagnosis of a psychiatric disability (coded with a primary disability of depression or other mood disorder, anxiety, schizophrenia, eating disorder, alcoholism, drug addiction, personality disorder, or other mental illness) and were closed either successfully employed or not employed after receiving IPE services (see Table 1).

Individuals with psychiatric disabilities who received IPE services and were receiving SSA disability benefits (e.g. Supplemental Security Income [SSI] and/or Social Security Disability Insurance [SSDI]) at application were selected for the analysis. Individuals who receive SSA disability benefits have been determined by SSA to have a serious and persistent mental disability. SSA has determined based on medical documentation that these individuals experienced extreme limitation in the ability to function independently, appropriately, effectively in one, or marked limitation in two, of four areas of mental functioning. These four areas of mental functioning are understanding, remembering, or applying information; interacting with others; concentrating, persisting, or maintaining pace; and adapting or managing oneself in a work setting. SSA has also determined that the mental disability has existed for over a period of at least 2 years (SSA, 2019a). These individuals all had a corresponding DOR significance of disability score of 1 or 2, indicating that the DOR counselor considered these individuals to have a most significant disability (priority category 1) or a significant disability (priority category 2). However, the DOR significance of disability determination is subjective based on the counselor's review of existing information, so the receipt of SSA disability benefits is a more reliable indication that the individual had a serious psychiatric disability. Thirty-five out of the total 53 cases had a primary disability code of Depression or Other Mood Disorder. Eight had a primary disability code of Other Mental Illness, seven were coded with Schizophrenia, two with Anxiety, and one with a Personality Disorder. Four of the cases coded with a primary disability of Depression or Other Mood Disorder were coded with a secondary disability of Alcoholism or Drug Dependence. The combination of a DOR significance of disability score of 1 or 2, receipt of SSA disability benefits at application, and the primary disabilities that were coded indicated that all the cases captured in the study were individuals with a serious psychiatric disability.

Title I funding by DOR for the OJT service for the individuals with serious psychiatric disabilities ranged from \$27 to \$4800 (n = 27). Therefore, cases where the client did not receive the OJT service but did receive Title I training costs for college, junior college, and/or other vocational training not exceeding \$5000 were included as the comparison group (n = 26). Limiting the comparison group to individuals whose training did not exceed \$5000 made the treatment methods more equitable for the analysis. Outlier cases where the client had received services for more than seven years were also excluded from the analysis.

To ensure that cost of training was not a predictor of employment outcomes, a one sample t-test was used to analyze the average cost of services. The average cost of the OJT service for the 27 participants (M = \$1739.63, SD = \$1123.94) compared to the average cost of the college, junior college, and/or other vocational training for the 26 participants in the non-OJT group (M = \$1779.27, SD = \$1110.01) was not significant, $t(25) = .18$, $p = .85$, 95% CI [-408.70, 487.98].

A detailed description of the demographic aspects of the client cases that were used in this analysis are included in Table 2.

Table 2

Demographic Data of Participants Included in the Logistic Regression Analysis

	Received OJT Service	n=27	Received traditional training and placement services	n=26
Male	59.3%	16	19.2%	5
Female	40.7%	11	80.8%	21
White	81.5%	22	65.4%	17
Hispanic	18.5%	5	23.1%	6
Black	18.5%	5	30.8%	8
Asian	7.4%	2	0.0%	0
American Indian	3.7%	1	7.7%	2
High School Diploma/GED or less	74%	20	77%	20
Associate, Bachelor's degree, or vocational certificate	26.0%	7	23.0%	6
SSI at application	81.5%	22	53.8%	14
SSDI at application	37..0%	10	57.7%	15
Age in 2016	Mean = 46.74	SD = 12.66	Mean = 49.65	SD = 7.32
Employed at closure	59.3%	16	15.4%	4
Not employed at closure	40.7%	11	84.6%	22

The Logistic Regression Model

Because the dependent variable was dichotomous (employed, not employed) we used a Logistic Regression Model to evaluate the differential effect of OJT.

Dependent Variable of Interest. The dependent variable of interest in the RSA-911 data set that indicated the type of closure was used for this analysis. This dichotomous measure was analyzed as follows: (1) the participant's case with DOR was closed with a successful employment outcome (Closetype = 3), or (2) was closed after the client received IPE services, but without a successful employment outcome (Closetype = 4). A code of 3, or successful closure, indicates that the client obtained permanent employment, was satisfied with the wages, benefits, and hours, and that the case was closed a minimum of 90 days after the client started working. A code of 4, or unsuccessful closure, indicates the client did not attain employment at closure from DOR.

Independent Variable of Interest. The independent variable of interest was the receipt of the OJT service. The researchers used the cases that were coded OJT = 2 in the RSA-911 data, indicating that the DOR counselor, client, and employer agreed to an OJT and the counselor used DOR Title I funds to pay an employer in the community to hire and train the client on the job. A code of OJT = 0 indicated that the client did not receive the OJT service. The participants that did not receive the OJT service all received traditional training services at a college and/or junior college followed by job placement services.

Covariates in the Regression Model. Substantial research has investigated the effect of individual characteristics on employment. In order to control for the confounding factors that may impact employment outcomes in the analysis of the DOR cases for individuals with psychiatric disabilities, we included in our regression model variables that have been shown in research studies to have an impact on employment outcomes including the gender, race, age, and educational level of the clients.

Disparities in employment based on gender and race continue to exist. Women earn 19% less income than men employed in similar positions (Bureau of Labor Statistics, 2017). Moreover, women are overrepresented in part-time, temporary, and low-wage sectors of the employment market (Bisello & Mascherini, 2017). Women with disabilities are employed in lower numbers, earn less than, and have a greater dependence on public support than men with disabilities (Bradley etal., 2013; Featherston, 2009; Lindsay et al., 2018; Mwachofi, 2009; Smith, 2007). There are also disparities in the provision of VR services based on gender (Mwachofi et al., 2010; Sprong et al., 2017). Race also has an impact on employment outcomes in state VR settings (Lukyanova et al., 2014; Moore et al., 2016).

Age and educational level have impacted employment outcomes. The highest frequency of employment found in the general population is in individuals 25–54 years old (Bureau of Labor Statistics, 2018). Tsang, Leung, Chung, Bell, and Cheung (2010) found that age was a significant predictor of employment outcomes for 62 studies of individuals with schizophrenia. In studies with individuals with serious mental illness conducted at multiple sites by Burke-Miller et al. (2006) each 10-year incremental increase in participant age was associated with an almost 20% decrease in the likelihood of the participant achieving competitive employment. Educational level affects employment outcomes for clients with serious psychiatric disabilities (Gao et al., 2010; Gao et al., 2011; Waynor et al., 2018).

Based on the literature, variables indicating gender, race, age, and prior educational level were included in the logistic regression analysis as covariates. Included in the regression model as dichotomous variables were the following client characteristics (1) male or female, (2) White or non-White, and at application, (3) had achieved either a high school education or less or a post-secondary degree or certificate. A continuous variable for age was also added to the model.

Missing Data. Of the total 53 cases included in the analysis, 3 cases had missing data regarding the date of birth of the client. The 53 cases included 4 predictor variables for a total of 212 predictor variables, hence a total of 1.4% missing data. Multivariate regression imputation was used to assign the few covariates with missing data.

Results

Analyses were calculated using SPSS Version 23.0. A total of 20 cases (37.7%) were successfully employed at closure. Sixteen out of 27 (59.3%) of the OJT cases had a successful employment outcome, compared to 4/26 (15.4%) of the non-OJT cases. The individuals who received the OJT service were significantly more likely to be successfully employed at closure, $\chi^2 = 10.85, p < .01$.

As a preliminary analysis, demographic variables previously identified in the literature as significant predictors of successful closure were entered in Step 1 of the logistic regression analyses. OJT was entered in Step 2. Gender and age were not significant predictors of employment in this sample and were removed from further analysis. White race and education level at baseline were significant predictors of successful closure and were retained for the final logistic regression.

The final logistic regression analysis was used to evaluate the effect of OJT on successful employment. White race and educational level were entered in Step 1. The receipt of OJT was entered in Step 2 in the final logistic model. The omnibus test for the final model was significant χ^2 (df = 3, n= 53) = 20.82, $p < .01$, indicating a significant relationship between the predictors and the outcome variable. The Hosmer and Lemeshow test was not significant, χ^2 (df=5, n= 53) = 2.02, $p = 0.85$, indicating a reasonable fit between the final model and observed data (Kleinbaum & Klein, 2010). The bivariate relationships between the baseline characteristics (white race, education level) with successful closure can be seen in Table 3.

Table 3

Logistic Regression Results Retaining Only the Significant Covariates

Variable	*B*	*SE*	Wald	df	Sig.	Exp(*B*)	95% CI for Exp(*B*) (lower, upper)
White	2.005	1.042	3.704	1	.054	7.427	.964, 57.238
EDLEVEL	2.013	.890	5.116	1	.024	7.489	1.308, 42.873
OJT	2.287	.787	8.433	1	.004	9.841	2.103, 46.058
Constant	-2.326	.922	6.366	1	.012	.098	

Baseline Covariates

Two baseline characteristics were retained in the logistic regression to control for potential differences across the treatment and comparison group. The results from the logistic regression indicate that individuals who had higher educational levels at intake were more likely to obtain employment than individuals who had lower educational levels, ($\chi^2 = 5.11, p = .02$). White race was not a significant predictor in this analysis.

Effect of OJT

Individuals with serious psychiatric disabilities who received OJT (i.e., "place then train") were more likely than those receiving vocational training (i.e., "train then place") to obtain employment at closure, $\chi^2 = 8.43, p < .01$. The number of successful closures in the OJT group (59.3% employed) was higher than typical DOR outcomes for the population of all individuals with psychiatric disabilities (49% employed). The clients in the non-OJT group had poor outcomes (15.4% employed), when compared to the treatment/OJT group or this DOR population as a whole.

Comparison Group Characteristics

The services received by the comparison group were examined. All (100%) of the 26 cases in the comparison group received vocational training from a college/university, community college, or vocational school, compared to 30.5% of the population of all individuals with psychiatric disabilities whose cases were closed after receiving IPE services from DOR in the same timeframe. Only 4 of the 26 cases (15.4%) were closed as successfully employed. Of the cases that received traditional "train and place" services, 10 (38.5%) completed a certificate or degree. However, only 3 (30%) of these 10 individuals were closed successfully employed. Another individual who completed some college coursework, but did not obtain a certificate or degree was also closed successfully employed, for a total of 4 individuals in this group of 26 who were closed successfully employed (15.4%).

Discussion

The results indicate that there was a significant increase in successful employment outcomes for the individuals that received the OJT service. This was expected after reviewing the literature that the supported employment IPS model is an evidence-based practice for individuals with serious psychiatric disabilities. As noted previously, the OJT service as it is provided at DOR supports the rapid placement, client choice, competitive work, disclosure, and follow-along support components of the IPS model.

It should be noted that there is a variable in the RSA-911 data set that indicates whether an individual received benefits counseling (which is part of the IPS model). Five cases in the participant group indicated that benefits counseling was provided, however it is estimated that the number of individu-

als that received benefits counseling was higher because this is a service provided at DOR by dedicated staff who hold the title "Work Incentives Planners". It is most likely that the cases were not coded as having received this service or there was an error in coding to record that this service was provided. In future studies, the benefits counseling variable can be included in data analyses to indicate if the individuals received this element of the IPS model.

Baseline characteristics were included as covariates. The effects of the baseline covariates of education and race were consistent with those found in the literature. In our analyses, individuals who had an associate, bachelor's degree, or vocational certificate at intake were more likely to obtain employment than individuals who had a high school diploma, GED, or less. White race was also a significant predictor of employment in an initial analysis with our sample. The effects of the baseline covariates of gender and age were not consistent with those found in the literature. Gender and age were not significant predictors of employment in our analysis of the sample of 53 cases. We included the covariates in order to control for the effect of known baseline characteristics.

The OJT intervention was associated with successful employment. Sixteen individuals out of the 27 in the group that received the OJT service were closed successfully employed (59.3%). The comparison group had employment outcomes that were substantially lower than the average for this population served in the DOR system. Only four of the individuals out of this comparison group of 26 individuals were closed successfully employed (15.4%).

This analysis indicates that individuals with serious psychiatric disabilities receiving the OJT service had significantly better employment outcomes than those who did not receive OJT. These findings are important because individuals with serious psychiatric disabilities can be difficult to place in continued, long-term employment as indicated by our comparison group.

Recommendations for Practice and Further Research

Traditional state-federal VR services have been inadequate to the needs of job seekers with serious psychiatric disabilities (Ackerman & McReynolds, 2005; Leahy et al., 2016; Peterson & Olney, in press; Rosenthal et al., 2007; Salzer et al., 2011). Based on our findings, we have several recommendations for policy, research, and practice that, if implemented, will improve outcomes for this diverse and talented group of individuals. Within our existing State-Federal VR system, the services that have been shown to significantly improve outcomes for this population are currently available:

1. In most cases, the "place then train" (IPS) model of services should be used to substitute for the traditional "train then place" (i.e., community college training followed by job placement) model when individuals with serious psychiatric disabilities are seeking employment.
2. State VR agencies should expend more Title I funds to establish OJT services for individuals with psychiatric disabilities.
3. Caseload sizes tend to be high in State VR agencies, and it is difficult for VR counselors to devote a high level of individualized service. VR agencies should provide for more collaboration between VR counselors and contracted job developers so that job developers can devote more individualized attention to implementing elements of the IPS model within service-delivery including arranging for the OJT service with an employer to be funded by the VR agency. Furthermore, the OJT service offers a significant financial incentive to employers to hire an individual with a disability.
4. VR staff should be encouraged to include services in the IPE that support the eight principles of the IPS supported employment model for individuals with psychiatric disabilities, including the (1) OJT service to support competitive employment, (2) eligibility based on client choice, (3) integration of rehabilitation and mental health services, (4) attention to worker preferences, (5) personalized benefits counseling, (6) rapid job search, (7) systematic job development, and (8) time-unlimited and individualized support.

5. The IPE should include the client's Wellness Recovery Action Plan (WRAP) or other plan for self-management of symptoms which have been demonstrated to improve the employment outcomes for individuals with serious psychiatric disabilities (Olney & Emery-Flores, 2017). The WRAP plan also supports the IPS elements of integration of rehabilitation and mental health services, attention to worker preferences, and time-unlimited and individualized support because the client can express their individual choices in all these areas within the WRAP plan.
6. Qualitative and quantitative studies should be conducted that focus on the OJT service and the experiences of the clients, VR staff, community partner agency staff, and employers who participate in coordinating the OJT service.
7. Research findings should be used to enhance training curriculum for emerging rehabilitation counseling professionals both at the university level and for staff development training within State VR.

Limitations of This Study

Use of the RSA-911 data set presents challenges. Researchers used a merged data set of all clients tracked in the RSA-911 aggregate data set for Federal Fiscal Years 2015 and 2016 in the California State VR Agency. These were the most current data that the authors could access at the time the study was initiated. DOR uses the Aware case management system (Aware Enterprise, 2019). There may have been errors in how client information was entered into the case management system such as omitted information by DOR staff or in the imputation of variables from the case management system into the RSA-911 data set. Information regarding required timeframes, forms, dates, services, providers, and costs is generally captured accurately with the Aware case management system because of the interface with DOR accounting systems and calendars. Information describing client characteristics including specific job information is entered directly by DOR staff into the Aware case management system, is self-reported, and is generally not validated with other systems.

Several county behavioral health funded job placement specialists in California now incorporate IPS model approaches in their services, but this use of the IPS model approach when the OJT service is not incorporated is not captured when the service is coded as a "job placement" service in the DOR case management system and subsequently, the RSA-911 data. Furthermore, the IPS model approach is certainly not captured in RSA-911 data if these county programs and not providing job placement services in collaboration with DOR.

Analyses of national RSA-911 data in regards to specific services and variables is problematic. Variations in service-provision, use of evidence-based practices, and state regulations regarding vocational rehabilitation services vary greatly from state to state in the VR system. This study was therefore limited to one state VR system.

A major limitation in this study is the very small percentage of cases available to analyze in which the client had a serious primary psychiatric disability and received the OJT service. Establishing a comparison group out of the many other cases that did not receive the OJT service was problematic. Additionally, we limited our analyses to a single state, where the lead author has considerable DOR experience. There are advantages of conducting analyses within one state in which we were familiar with the characteristics of the state and dataset and were able to control for confounding variables in terms of different sources of funding, severity of disability, and client characteristics.

Conclusion

Within the State-Federal VR system, the OJT service supports rapid placement, client choice, competitive work, disclosure, and follow-along support components of the IPS model. OJT services have the potential to further support the IPS supported employment model when all principles of the IPS model are incorporated into the IPE within the DOR service delivery system. WRAP plans and a copy

of the information from the meeting with an in-house benefits counselor, should be included in the IPE in order to further support the IPS model of supported employment.

An analysis of RSA-911 data indicates that California's utilization of RSA Title I funds to provide the OJT service for individuals with psychiatric disabilities, although highly effective, is extremely underutilized. The OJT service appears highly effective for individuals with serious psychiatric disabilities, which is consistent with previous research conducted on the IPS model and employment outcomes for this population.

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