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Effectiveness of Individual Placement and Support Supported Employment for Young Adults

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Abstract

Objective—The Individual Placement and Support (IPS) model of supported employment was first developed in community mental health centers for adults with severe mental illness. While IPS is an established evidence-based practice in this broad population, evidence on its effectiveness focused specifically on young adults has been limited. The current study aimed to address this gap.

Methods—To investigate the effects of IPS on young adults, the authors conducted a secondary analysis on a pooled sample of 109 unemployed young adults (under age 30) from four randomized controlled trials employing a common research protocol that included a standardized measurement battery and rigorous fidelity monitoring. Researchers assessed these participants over 18 months on nine competitive employment outcome measures.

Results—On all measures the IPS group had significantly better employment outcomes. Overall, 40 (82%) of IPS participants obtained employment during follow-up compared to 25 (42%) of control participants, $\underline{X}^2 = 17.9$, $p < .001$. IPS participants averaged 25.0 weeks of employment, compared to 7.0 weeks for control participants, $\underline{t} = 4.50$, $p < .001$.

Conclusions—The current analysis supports a small number of previous studies in showing that IPS is highly effective in helping young adults to attain competitive employment. When young adults acquire competitive jobs and initiate a path toward normal adult roles, they may avoid the cycle of disability and psychiatric patient roles that are demeaning and demoralizing.

Keywords

employment; vocational rehabilitation; young adults; supported employment

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INTRODUCTION

Employment embodies recovery for people with severe mental illness (1), especially among young adults recently diagnosed with a psychiatric disorder (2, 3). Young adults with a psychiatric disorder aspire to the same goals as their peers who do not have psychiatric disorders (4). Unfortunately, however, most young adults with severe mental illness are neither competitively employed nor enrolled in educational programs (5, 6). Clinicians have proposed and evaluated a range of vocational program models for young adults, aged 30 and under (7-9). The results have been largely disappointing. For example, in the Youth Transition Demonstration, a multi-site randomized controlled trial evaluating an employment model providing work-based experiences and career counseling for young people with disabilities (10), the only site specifically enrolling youth with serious emotional disturbances found no differences between the employment model and a treatment-as-usual control group. Until recently, no employment model has been clearly established as the recommended model for young adults.

In contrast, the literature on older adults with severe mental illness has established an undisputed evidence-based model, the Individual Placement and Support (IPS) model of supported employment (11-14). IPS incorporates eight principles: eligibility based on consumer choice, focus on competitive employment (i.e., jobs in integrated work settings in the competitive job market at prevailing wages with supervision provided by personnel employed by the business), integration of mental health and employment services, attention to client preferences, work incentives planning, rapid job search, systematic job development, and individualized job supports (15). A comprehensive review of randomized controlled trials comparing IPS to other vocational approaches conducted internationally, in both urban and rural communities, found that all 15 published studies reported significant differences favoring IPS across a range of employment indicators, in most cases with large differences (16). Overall, about two-thirds of IPS participants obtained competitive employment, more than twice the employment rate for those enrolled in comparison vocational programs, and accumulated triple the earnings from employment as controls (17). After gaining employment, IPS participants typically work at least half time, averaging over 10 months of job tenure in an initial job (18). About half of those obtaining a job in IPS maintain steady employment over a ten-year period (19).

A recent secondary analysis for seven randomized trials of vocational services for clients with severe mental illness examined employment outcomes for two age subgroups (ages 18-24 and ages 25-30) (7). In the older subgroup (ages 25-30), participants in the experimental condition had better employment outcomes than those in the control condition, but the findings were reversed for the 18-24 subgroup.

Policy and program leaders increasingly propose including IPS in early intervention programs for first episode of psychosis (20). Initial studies have been promising (21). A review of evaluations of IPS and related supported employment programs for first episode clients identified eight studies (22). Five were pre-post evaluations (23-26), one used a quasi-experimental design (27), and three were small randomized controlled trials (28-30). Aggregating the results from these studies, 709 clients receiving supported employment

achieved a 49% employment rate, while 165 clients receiving early intervention services other than supported employment achieved a 31% rate (22). These early intervention studies incorporating IPS have been uneven in methodological rigor. In addition, their generalizability is mostly limited to programs offering specialized and intensive clinical services for patients with first episodes of psychosis.

The current study addressed the effectiveness of IPS for young adults with severe mental illness receiving treatment within mainstream community mental health agencies serving the adult population. Using a secondary analysis of four published randomized controlled trials, we examined the effectiveness of IPS for study participants under the age of 30. We hypothesized that young adults receiving IPS would have better competitive employment outcomes than those receiving alternative vocational services.

METHODS

Overview

We conducted secondary analyses of a pooled sample from four randomized controlled trials employing a common research protocol that included a standardized measurement battery and rigorous fidelity monitoring of the IPS model. Details of the analytic strategy and measures for earlier reports on this aggregated database have been reported elsewhere (17, 31, 32). For the current analyses, we compared competitive employment outcomes among 109 unemployed clients with severe mental illness under the age of 30 receiving either IPS or alternative vocational services. Researchers assessed participants over 18 months on nine competitive employment outcome measures. Institutional review boards at local sites and participating universities approved the original projects. In addition, the data re-analyses were approved by the Institutional Review Boards of Indiana University-Purdue University Indianapolis and Dartmouth College.

Sample and Procedures

Table 1 describes the four randomized controlled trials of IPS versus other vocational services from which the sample was drawn (33-36). The follow-up period varied from 18 to 24 months in these studies; however, for the current analyses, we standardized the follow-up period to the first 18 months after enrollment. All four studies compared a newly-established IPS program to one or more well-established vocational programs. Each study ensured fidelity to the IPS model through intensive training/consultation and ongoing monitoring using the IPS Fidelity Scale (37).

All study participants were clients in public mental health programs. They were unemployed adults who met each state's criteria for severe mental illness. In the two earlier studies (34, 35) participants were required to have at least two years of major role dysfunction. Other common eligibility criteria included desire for competitive work, ability and willingness to give informed consent, and absence of significant medical conditions precluding employment. The studies were not aimed at enrolling participants with recent illness onset (specifically excluding such clients in the first two studies), nor was stage of illness systematically measured.

All four studies employed a series of informational groups as a condition of study enrollment (38). Among clients attending informational groups, the rates of consenting to participate were as follows: NH study (50.4%), DC study (76.0%), Hartford study (72.1%), and Chicago study (67.6%). Overall, 699 (65.8%) of 1063 clients agreed to participate across the four studies. Reasons for nonparticipation were diverse and included the lack of a vocational goal and concerns about losing benefits. Six Chicago clients were administratively dropped shortly after study entry, leaving a final intent-to-treat sample of 693, of which 681 (98%) had usable employment outcome data.

All four studies used the Structured Clinical Interview and Rating Criteria for Diagnostic and Statistical Manual of Mental Disorders-IV (SCID) (39) to determine psychiatric diagnosis. The studies also employed identical or related standardized instruments of assess symptoms, quality of life, and baseline and follow-up measures. The studies used similar protocols to track employment outcomes. Despite similar research methods, the four studies differed on geographic location and control group interventions, as shown in Table 1.

For the current analysis, the only additional inclusion criterion was that participants were under the age of 30. A total of 109 (16.0%) of the 681 participants in the four parent studies met this age criterion: 35 (32.1%) from the New Hampshire study, 9 (8.3%) from the Washington study, 25 (22.9%) from the Hartford study, and 40 (36.7%) from the Chicago study. In other words, the study sample used in the current analyses fell in the lower tail of the age distribution falling approximately one standard deviation or more below the mean.

Measures

Competitive employment denotes jobs in integrated work settings in the open job market at prevailing wages with supervision provided by personnel employed by the business. We examined nine competitive employment outcomes: *job acquisition, total weeks* worked, *job tenure in longest-held job* (defined as weeks worked on the longest-held competitive job), *total hours* worked, average *hours per week* worked, *total wages* (defined as total earnings from competitive employment), *days to first job* (defined as the number of days from admission to the IPS or alternative program to first competitive job), *ever working ≥20 hrs/wk* (defined as working at least 20 hours a week at some time during follow-up), and *days to first job*. The measure of *days to first job* is a negative indicator of successful employment; that is, the longer the duration, the poorer the outcome. *Job acquisition* and *ever working ≥20 hrs/wk* are dichotomous measures; the others are continuous measures. Wage data were adjusted to December 2010 dollars according to the Consumer Price Index for All Urban Consumers. Finally, we determined the number of competitive jobs held during follow-up.

Statistical Analyses

We combined IPS participants from the four studies into one composite group and control participants into another. Within each group, we also examined the *worker* subgroup, that is, participants who were competitively employed at any time during follow-up.

We first compared the 18-month competitive employment outcomes between the total IPS and control samples and then the same variables in the worker subsample. We assessed job

acquisition for the total sample and days to first job for the worker sample only. Positively skewed continuous variables were log transformed prior to conducting statistical tests. We conducted *t*-tests for continuous variables and chi-square tests for dichotomous variables and computed effect sizes, the standardized mean difference (d) (40) for differences between the two vocational programs on continuous vocational outcomes. We estimated effect sizes for *job acquisition* and *ever working ≥ 20 hrs/wk* using an arcsine transformation (41). All effect sizes were calculated on untransformed observations.

To check on the potential confounding effects of baseline measures, we repeated the pertinent analyses with analysis of covariance for the continuous outcome measures, controlling for three variables: weeks worked during the 5 years prior to baseline, ethnicity (Caucasian versus other), and diagnosis (psychotic disorder versus other). For the dichotomous outcome measures, we used logistical regression and report the Wald statistic. We report both sets of statistical findings (i.e., with and without covariates). Finally, we conducted additional subgroup analyses on the employment outcomes for two age groups with the young adult sample: participants younger than 25 in one group and the remainder aged 25 and older but under 30 in the other group.

RESULTS

Sample Characteristics

The sample ranged in age from 20 to 29 with a mean age of 26. The IPS and control groups did not differ on any sociodemographic or clinical characteristic measured, as shown in Table 2, except for race/ethnicity. The control condition had a higher percentage of Latino participants (17% versus 4%) due to oversampling for Latinos in the Hartford study and the 2:1 randomization consisting of two control participants for each IPS participant. With respect to work history, a statistical trend indicated more weeks worked in paid jobs for IPS participants.

Competitive Employment Outcomes

On all measures the IPS group had significantly better employment outcomes, both without any covariates and with the covariates included, as shown in Table 3. In the total young adult sample, the IPS group had significant better outcomes on all 8 competitive employment indicators examined, with effect sizes ranging from medium (.48) to large (.86). The competitive employment rate during follow-up for IPS participants was nearly twice than for control participants (82% versus 42%). Compared to the control group, the IPS group averaged more than triple the number of weeks worked, job tenure in longest job, and total hours worked.

In the analyses that did not control for covariates, four of the eight employment indicators statistically favored IPS over the control group in the worker sample (i.e., client who held a competitive job during follow-up). IPS participants averaged 70 fewer days to start their first job than control participants. IPS workers averaged nearly twice the total weeks worked compared to control workers. Covariance analysis reduced the number of significant findings from four to three.

Overall, the addition of three covariates to the statistical model resulted in only small changes in the findings, generally reducing the t value by 13% in the total sample and with generally small changes as well in the worker sample analyses. Work history was the only significant covariate of the three included in the model.

Age Stratification Analyses

In additional analyses we replicated portions of the methodology used by Burke-Miller et al. (7), with one change: our older subgroup used an age cut-off of age under 30 while the earlier study used a cut-off of age under 31. In the current study, the pattern of significant differences in competitive employment outcomes favoring IPS found in the total sample was also generally found within each of the two subgroups. In the under-25 subgroup, 14 (93.3%) of 15 IPS participants held a competitive job, compared to 9 (39.1%) of 23 control participants, $\chi^2(1) = 11.2$, $p < .001$ and IPS participants averaged more weeks worked than control participants (27.4 vs. 6.7, $t = 3.41$, $p = .002$). In the 25-29 subgroup, 26 (76.5%) of 34 IPS participants held a competitive job, compared to 16 (43.2%) of 37 control participants, $\chi^2(1) = 8.1$, $p = .004$, and IPS participants averaged more weeks worked than control participants (24.0 vs. 7.1, $t = 3.18$, $p = .002$).

DISCUSSION

This study extends the extensive literature on the effectiveness of IPS for people with severe mental illness, documenting that the young adult age group benefits from IPS services. Although the strong findings across all competitive employment indicators increase confidence that the findings are robust, replications by other research groups are needed. Secondary analyses of other published multisite studies might be a next step.

Young adults in their twenties face a series of developmental tasks (42). One central developmental milestone involves gaining employment and developing an identity as a worker. Young adults who experience psychiatric crises often drop out of school or work, disrupting this normative life trajectory. The current study unambiguously shows that the IPS model is effective in assisting young adults with severe mental illness enrolled in community mental health programs to attain competitive work. The findings are strong across all competitive employment measures examined, mirroring the findings for the overall combined data set (17).

One obvious question regarding treatment and rehabilitation for young adults is whether the evidence-based models developed for older adults generalize to a younger age group. We assume that developing interventions should be guided by two principles. First, first-hand knowledge of the population is critical. This first-hand knowledge comes from clinical experience, ethnographic observation, the adult development literature, and other sources. For example, young adults often have unfinished educational aspirations, so any employment model should incorporate educational goals alongside employment goals (43). Second, evidence should guide decisions about what model to use. In this case, the strong evidence in favor of IPS suggests that most, if not all, of the IPS principles are appropriate for young adults. Some leaders in the field of early intervention for people with early psychosis have already reached this conclusion (44).

In contrast, others have proposed that young adults should participate in career counseling, unpaid internships, and other preparatory activities in light of their career immaturity and lack of work experience (9, 45). These authors contend that rapid job search approaches such as IPS lead to unsatisfying entry-level jobs. In their view, young adults should begin by planning a career trajectory and taking longer to find jobs but ultimately becoming more satisfied with their jobs. This theory has not been supported in randomized controlled trials with adults with severe mental illness (34, 46). Proponents of career counseling approaches for young adults implicitly assume that findings from the general adult literature do not generalize to young adults.

While the evidence to date supports the effectiveness of IPS for young adults, researchers should continue to evaluate adaptations to this evidence-based model for possible improvements. We hypothesize that successful adaptations will more often be additions to the IPS model instead of compromises in IPS fidelity, given the findings from the implementation literature suggesting that augmentations are more likely to result in improved effectiveness than challenges to basic principles (47).

Our analyses of the two subgroups within the young adult sample indicated that IPS was effective for both the younger (under 25) and the slightly older subgroups of young adults (25-29), with similarly large differences between IPS and control participants in both subsamples. Our findings differ from another study (7), which found treatment differences for the older subgroup but not the youngest. We interpret our findings as demonstrating that high-fidelity IPS is effective across a wide range of age groups, a finding that has been replicated by several research groups (15). Contradictory findings (7) could be due to the lack of clearly-defined treatment and control conditions in their aggregate analyses.

Study limitations

The parent studies from which this data set was drawn were not aimed at the young adult population, and the findings may not generalize to other settings or other young adult populations (e.g., those raised in the foster care system and transitioning to adult services). Specifically, none of the parent studies included participants under the age of 20. Moreover, the IPS programs implemented in these studies were not expressly adapted to the young adult population. The study sample was relatively small, restricting statistical power for subgroup analyses. Educational outcomes were not examined in the parent studies, nor did the IPS programs provide assistance to participants in the educational realm, despite the fact that educational attainment is a common goal in this age group (43). Finally, the parent studies span a period of time starting in the mid-1990s extending over more than a decade. While we assume the findings would generalize to the present, replication studies are needed given recent changes in US health care policies (48).

CONCLUSIONS

Employment has a crucial role in the recovery process for young adults experiencing early episodes of severe mental illness. IPS supported employment helps them to return to competitive employment, thereby achieving a key developmental milestone. When young adults acquire competitive jobs, they have mainstream adult roles and may avoid the cycle of

disability and psychiatric patient roles, which can be demeaning and demoralizing. Preventing the formation of an identity as a disabled person is in the best interests of the individual, families, and society as a whole. IPS is well suited to facilitate this goal.

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Table 1

Four randomized controlled trials of Individual Placement and Support

Study	Drake et al. (34)	Drake et al. (35)	Mueser et al. (36)	Bond et al. (33)
Location	Manchester and Concord, NH	Washington, DC	Hartford, CT	Chicago, IL
Sample Size	140	150	204	187
Control Condition	*Group Skills Training*: Initial training in choosing, getting, and keeping a job, followed by competitive job placement services from a stand-alone rehabilitation program	*Enhanced Vocational Rehabilitation*: Facilitated by a vocational rehabilitation counselor assigned to the project, services provided by well-established rehabilitation agencies offering sheltered workshops	*Clubhouse and Brokered Supported Employment*: Clubhouse provided work-ordered day and transitional employment; brokered supported employment included off-site supported employment and janitorial enclave	*Diversified Placement*: vocational approach emphasizing a range of job options, including agency-run businesses, agency-contracted placements with local business and sheltered work options
Baseline Characteristics of Study Participants	* Aged 37.5 ± 9.5 yrs * 49% male * 96% Caucasian * 74% ≥high school * 51% never married * 22% homelessness during past yr * 46% schizophrenia-spectrum * 11% substance use disorder	* Aged 40.0 ± 7.1 yrs * 39% male * 83% African American * 65% ≥high school * 65% never married * 26% homelessness during past yr * 69% schizophrenia-spectrum * 16% substance use disorder	* Aged 41.2 ± 9.1 yrs * 62% male * 45% African American, 31% Latino * 48% ≥high school * 73% never married * 75% schizophrenia-spectrum * 25% substance use disorder	* Aged 38.8 ± 9.6 yrs * 64% male * 51% African American, 8% Latino * 82% ≥high school * 74% never married * 19% homelessness during past yr * 58% schizophrenia-spectrum * 11% substance use disorder

Table 2
Baseline comparisons between IPS and control participants

	IPS (N = 49)	Control (N = 60)	Total (N = 109)	Test of Significance
Sociodemographics				
Age	26.11 (2.71)	25.83 (2.80)	25.96 (2.75)	$t = .52$, *ns*
Sex	**n (%)**	**n (%)**	**n (%)**	
Male	33 (67.3%)	42 (70.0%)	75 (68.8%)	$\chi^2(1) = .09$, *ns*
Race/Ethnicity				
Caucasian	26 (53.1%)	18 (30.0%)	44 (40.4%)	$\chi^2(2)=8.12$, $p<.05$
African American	20 (40.8%)	31 (51.7%)	51 (46.8%)	
Latino	2 (4.1%)	10 (16.6%)	12 (11.0%)	("Other" excluded)
Other	1 (2.0%)	1 (1.7%)	2 (1.8%)	
Education level				
< High school	10 (20.4%)	22 (36.7%)	32 (29.4%)	$\chi^2(2) = 4.23$, *ns*
= High school	24 (49.0%)	27 (45.0%)	51 (46.8%)	
> High school	15 (36.6%)	11 (18.3%)	26 (23.9%)	
Marital status				
Never married	42 (85.7%)	55 (91.7%)	97 (89.0%)	$\chi^2(2) = 1.04$, *ns*
Married/living together	1 (2.0%)	1 (1.7%)	2 (1.8%)	
Divorced/separated/widowed	6 (12.3%)	4 (6.6%)	10 (9.2%)	
Disability benefits				
SSI only	22 (45.8%)	26 (44.1%)	48 (44.9%)	$\chi^2(3) = 2.82$, *ns*
SSDI only	7 (14.6%)	5 (8.5%)	12 (11.2%)	
SSI & SSDI	3 (6.3%)	9 (15.2%)	12 (11.2%)	
Neither	16 (33.3%)	19 (32.2%)	35 (32.7%)	
Homelessness during past year	13 (30.2%)	12 (30.8%)	25 (30.5%)	$\chi^2(1) = .00$, *ns*
Clinical Characteristics				
Primary diagnosis				
Psychotic disorder	18 (36.7%)	33 (55.0%)	51 (46.8%)	$\chi^2(2) = 3.92$, *ns*
Mood disorder	26 (53.1%)	24 (40.0%)	50 (45.9%)	
Other	5 (10.2%)	3 (5.0%)	8 (7.3%)	
Substance abuse	8 (18.2%)	9 (16.7%)	17 (17.3%)	$\chi^2(1) = .04$, *ns*
Psych hospitalization past year	16 (42.1%)	37 (52.1%)	53 (48.6%)	$\chi^2(1) = .99$, *ns*
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	
BPRS symptom total[a]	31.94 (7.69)	33.88 (9.15)	33.01 (8.54)	$t = -1.19$, *ns*
Days hospitalized past year	25.47 (46.07)	27.17 (49.28)	26.40 (47.65)	$t = -.18$, ns
Work History in Past 5 Years				
Weeks of paid employment	82.28 (72.62)	53.38 (63.59)	66.37 (69.00)	$t = 1.94$, $p=.06$

[a]Sum of 18 items from Expanded Brief Psychiatric Rating Scale (49)

Table 3

Comparisons of competitive employment outcomes at 18 months

	IPS	Control	d [a]	Test of Significance [b] (without covariates)		Test of Significance [b,c] (with covariates)	
All Sample	**N = 49** n (%)	**N = 60** n (%)					
Job acquisition	40 (81.6%)	25 (41.7%)	0.86	$\chi^2(1) = 17.9$	<.001	*Wald* (1) = 14.2	<.001
Ever working ≥20 hrs/wk	32 (65.3%)	17 (28.3%)	0.76	$\chi^2(1) = 14.9$	<.001	*Wald* (1) = 10.3	<.001
	M (SD)	**M (SD)**					
Total weeks	25.00 (26.89)	6.97 (14.09)	0.75	$t = 5.36$	<.001	$t = 4.69$	<.001
Job tenure (weeks)	20.06 (23.09)	5.31 (10.06)	0.72	$t = 5.29$	<.001	t = 4.64	<.001
Total hours *	660.63 (879.13)	203.66 (644.34)	0.56	$t = 5.11$	<.001	$t = 4.40$	<.001
Hours per week *	18.95 (12.98)	10.23 (15.97)	0.63	$t = 4.42$	<.001	$t = 3.76$	<.001
Total wage *†	$6,301 ($9,377)	$2,018 ($7,591)	0.48	$t = 4.77$	<.001	$t = 4.12$	<.001
Number of jobs	1.76 (1.39)	0.72 (1.17)	0.78	$t = 4.91$	<.001	$t = 4.35$	<.001
Worker Sample	**N = 40** n (%)	**N = 25** n (%)					
Ever working ≥20 hrs/wk	32 (80.0%)	17 (68.0%)	0.28	$\chi^2(1) = 1.19$	0.28	*Wald* (1) = 0.42	0.52
	M (SD)	**M (SD)**					
Total weeks	30.63 (26.70)	16.73 (17.83)	0.56	$t = 2.43$	<.05	$t = 2.12$	<.05
Job tenure (weeks)	24.57 (23.29)	12.73 (12.25)	0.57	$t = 2.34$	<.05	$t = 2.06$	<.05
Total hours *	813.09 (910.33)	488.78 (935.67)	0.35	$t = 2.09$	<.05	$t = 1.50$	0.14
Hours per week *	23.32 (10.18)	24.55 (16.15)	−0.10	$t = 0.38$	0.70	$t = 0.66$	0.51
Total wage *†	$7,755 ($9,858)	$4,844 ($11,287)	0.28	$t = 1.39$	0.17	$t = 0.84$	0.41
Number of jobs	2.15 (1.23)	1.72 (1.24)	0.35	$t = 1.66$	0.10	$t = 1.24$	0.22

	IPS	Control	$\underline{d}$ [a]	Test of Significance [b] (without covariates)		Test of Significance [b,c] (with covariates)	
Days to first job	126.70 (107.72)	197.12 (128.98)	−0.62	$t = -2.35$	<.05	$t = -2.01$	<.05

[a] $\underline{d}$ refer to standized mean difference effect size.

[b] All continuous outcome variables log transformed for significance testing.

[c] Covariates were work history (weeks worked in past 5 years), ethicity (Caucasian/other), diagnosis (psychotic disorder/other)

[*] One case in IPS was missing hours data.

[†] Wage was adjusted into August 2012 dollars using the Consumer Price Index for All Urban Consumers.