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Preventing Unemployment and Disability Benefit Receipt Among People With Mental Illness: Evidence Review and Policy Significance

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Objective: We identify effective services to assist 3 groups of people with mental illnesses become or remain employed and prevent dependence on disability cash benefits: (a) individuals, including youth, who are experiencing an initial episode of psychosis; (b) employed individuals at risk of losing jobs due to mental illness; and (c) individuals who are or may become long-term clients of mental health services and are likely to apply for disability benefits. ***Method:*** We searched for articles published between 1992 and 2015 using key word terminology related to employment support services and each subgroup, and prioritized articles by study design. ***Results:*** The individual placement and support model of supported employment is more effective than traditional vocational programs in helping people with serious mental illnesses who are engaged in treatment or receiving disability benefits obtain competitive employment. Some early intervention programs effectively serve people who experience a first episode of mental illness, but more research is needed to demonstrate long-term outcomes. Less is known about the effectiveness of employment interventions in preventing unemployment and use of disability benefits among individuals at risk for job loss or long-term mental illness. ***Conclusions and Implications for Practice:*** States can fund employment supports to help prevent the need for disability benefit receipt by creatively combining federal sources, but the funding picture is imperfect. Medicaid expansion and other provisions of the Affordable Care Act may fund employment supports and assist in reducing dependence on disability benefits.

Keywords: supported employment, early intervention, mental illness, employment, funding for supported employment

Compared with the general population, people with mental illnesses are disproportionately unemployed or underemployed and overrepresented among long-term recipients of federal disability and social safety-net programs, such as Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI). Participation by people with mental illnesses in these programs has grown considerably within the last decade (Bailey & Hemmeter, 2014). Many people report that they want to work but are unable to do so; a common fear is the loss of benefits, particularly health insurance if they attempt work.

Expansion of health coverage under the Affordable Care Act (ACA) may reduce barriers to employment and expand employment supports for people with mental illnesses and therefore reduce new applications for cash benefit programs, but we know little about what services and supports promote employment for those likely to apply for benefits due to a mental illness. Much research has been conducted over the past 25 years regarding the effectiveness of supported employment (SE), particularly the Individual Placement and Support (IPS) model, but IPS has been primarily used for people who are not working and who already receive public disability cash benefits. Little is known about the effectiveness of this model for those who are currently employed and at risk of job loss, or those who have not yet applied for disability cash benefits.

In an attempt to identify programs that prevent job loss or support employment among those with mental illnesses most likely to apply for SSI and SSDI benefits, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) of the U.S. Department of Health and Human Services funded the Improving Employment Outcomes for People with Psychiatric Disorders project. The purpose of the project was to identify effective services that might help individuals with mental illnesses that are most likely to apply for SSI and SSDI find and retain employment. ASPE was particularly interested in learning what supports will assist the following subgroups of people with psychiatric disorders who, without intervention, are at risk for long-term unemployment and likely to apply for disability cash benefits:

1. Individuals, including youth, who are experiencing an initial episode of psychosis and require early intervention services. Over the past 20 years, a substantial literature has emerged regarding early intervention to prevent psychosis. The main concern in early stages of psychosis is with preventing full-blown psychosis, and theory posits that functional deterioration and concomitant unemploy-

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ment and long-term dependence on disability cash benefits can be prevented or ameliorated with early intervention (Centers for Medicare and Medicaid Services [CMS], 2015; McFarlane et al., 2012).

2. Currently employed individuals at risk of losing jobs due to mental illness. Little is known about interventions that help workers who experience mental illness to remain employed and off of the disability benefit rolls. Depression is common among workers and is among the leading causes of disability (Adler, McLaughlin, Rogers, Chang, Lapitsky, & Lerner, 2006). Most people who experience depression are treated in primary care or through private-sector mental health services and, therefore, do not receive SE (which is concentrated in the public sector). Workers who experience severe depression or other psychiatric disorders may lose their jobs and apply for cash benefits if they do not receive effective intervention (Lerner, Allaire, & Reisine, 2005).

3. Individuals who currently are or are expected to be long-term clients of mental health services and are likely to apply or are in the process of applying for disability cash benefits. This group includes those who previously experienced illness episodes but were not diagnosed or receiving treatment, and those who have long been diagnosed and receiving mental health services but not receiving disability cash benefits. A significant proportion of people in this group are likely to have been previously employed, including those previously employed by the military. Others in this group may have been former Temporary Assistance to Needy Families (TANF) recipients, those who are homeless, or those leaving prison.

Each of the above groups faces unique challenges that must be addressed in effective interventions. Our study targeted the following research questions:

- What services are most effective in helping people with mental illnesses in these three subgroups find and keep employment and potentially avoid application for disability cash benefit programs?
- How can employment services for people with mental illnesses be funded through the ACA and other sources?

In this article, we summarize our review of 20 years of evidence (1992–2012; O'Day et al., 2014), update the review to present evidence through 2015, and present tables summarizing the evidence from the studies we reviewed. Because many of the studies we reviewed are based upon SE, we begin with a brief review of studies assessing the effectiveness of SE. It is the most evidence-based practice and therefore most likely to address unemployment for the populations in question. We follow with evidence of programs to promote employment targeted to the three subgroups mentioned above. We then discuss funding options for employment services for these subgroups and policy implications for moving forward. We use the term "mental illness" unless the study we cite uses an alternative term or describes a specific condition, such as schizophrenia or bipolar disorder.

Method

In consultation with a library information specialist, we identified the suite of relevant databases and indexes to search, including Ovid MEDLINE, PsycInfo, Cochrane Database of Systematic Reviews, Scopus, and CINAHL. We narrowed the field to articles published in English between 1992 and 2015 to capture almost 25 years of evidence.

We then selected appropriate key word terminology for each subgroup (see Table 1). We also searched for reviews summarizing the extensive literature on SE. The search for each subgroup included general terms for (a) disability type, including psychotic disorders, mental disorders, severe mental illness, and schizophrenia; and (b) employment terms, such as employment outcomes, employment supports, and work supports. To these key words we added language specific to each subgroup.

We then reviewed abstracts to assign each study to a subgroup and exclude articles that did not focus on mental illness or employment or did not provide study results. Remaining articles were sorted by study design: systematic review, nonsystematic review, randomized clinical trial (RCT), quasi-experimental design, pre-post design, implementation study, and other. We also searched for gray literature and other suitable studies by conducting searches on websites of key agencies, obtaining articles and reports of demonstration and research projects known to the authors, and contacting study authors. We summarized each study in separate tables for each study group, including study identifiers, study description, research methodology, study population, sample size, results, and limitations. We provide a summary of this information in Tables 2 through 6.

Results

Evidence for Supported Employment (SE)

SE is a strategy for helping people with disabilities participate in the labor market, in a job of their choosing, with professional support (Bond et al., 2001). The term "Individual Placement and Support (IPS)" has been coined to refer specifically to SE services that adhere to a full set of evidence-based principles, including a focus on competitive employment in the community, rapid job search, adherence to client preferences, integration of mental health and employment services, and time-unlimited individualized support after job placement (Bond, 2004; Bond, Drake, & Becker, 2008; Twamley, Jeste, & Lehman, 2003). Properly implemented, IPS programs are formally assessed regarding adherence, or fidelity, to these evidence-based principles. We report program names as they appear in the studies, using the term "IPS," for example, when study authors report to have implemented IPS. We use the term "SE" when programs are described as simply supported employment models, and to refer to the category of different SE models (inclusive of IPS).

Tables 2 and 3 document studies that demonstrate some positive outcomes for individuals with mental illness who receive SE services (Bond et al., 2008; Campbell, Bond, & Drake, 2011; Kinoshita et al., 2013; Marshall et al., 2014; Twamley et al., 2003), particularly in rates of competitive employment (such as in Latimer et al., 2006; Lehman et al., 2002). SE programs, including IPS, have also shown some positive employment results when

Table 1
Search Terms and Results of Literature Review

Area or population subgroup	Search terms	Number of unduplicated articles identified	Number of articles included[a]
Supported employment	Supported employment; systematic reviews; reviews	133	28
First episode	First episode; onset of psychosis; onset of schizophrenia; adolescents; young adults; psychotic disorders; mental disorders; serious emotional disturbances; supported employment; job support; employment outcomes; employment supports; work supports; individual placement; vocational rehabilitation; wrap-around services	105	9
Risk of job loss	Employer disability insurance; employee assistance programs; mental health parity; reasonable accommodations; job retention; job tenure; job support; depression; workplace; risk of job loss; mental health friendly workplace; return to work; employment outcomes; supported employment; vocational rehabilitation; mental disorders	>650	13
Long-term users of mental health services	Serious mental illness; schizophrenia; bipolar disorder; psychiatric disability; post-traumatic stress disorder; depression; employment outcomes; vocational outcomes; job outcomes; work supports; employment supports; job supports; disability supports; vocational services; employment services; disability services; Social Security Disability Insurance; Supplemental Security Income; veterans; military; Temporary Assistance for Needy Families (TANF); homeless; criminal justice; immigrants; economic recession	207	10

Note. Excludes articles used for background material. Most of the articles identified through the initial search terms were eliminated during the abstract review stage because they did not meet the review criteria.
[a] This number includes articles identified through other sources, such as reference lists of literature reviews or reports.

tested in combination with other interventions, such as Assertive Community Treatment (Chandler, Meisel, Hu, McGowen, & Madison, 1996; Cook et al., 2005; Gold et al., 2006; Macias et al., 2006; McFarlane et al., 2000; McFarlane, Dushay, Stastny, Deakins, & Link, 1996) and systematic medication management and complete health insurance with no out-of-pocket expenses (Frey et al., 2011). Marshall et al. (2014) graded the research evidence for SE as high, based on 12 systematic reviews, which included 17 RCTs of the IPS model. However, based on 14 RCTs, Kinoshita et al. (2013) rated the evidence for IPS as very low to uncertain in quality. Although Kinoshita et al. found studies of IPS to report improvements in employment outcomes, these authors point out that effectiveness of IPS is uncertain due to a low number of studies reporting any well-defined outcome, high participant attrition rates, and, in some cases, small sample sizes.

The duration of most SE studies is also relatively short, raising the question of whether any advantages to SE can be sustained over time. There is room for optimism. One long-term study that compared SE with traditional vocational rehabilitation services in Switzerland found that beneficial effects of SE on work at 2 years were sustained over the 5-year follow-up period ($p < .001$; Hoffmann et al., 2012, 2014). Reliance on SE services for retaining competitive work decreased between 2 and 5 years. Results of another study were mixed but overall favored SE. Cook, Burke-Miller, and Roessel (2016) followed a subsample of randomly assigned SE and control participants for 13 years posttreatment, from 2000 through 2012. SE participants were almost three times as likely as controls to have any earnings over the entire 13-year period (odds ratio = 2.89, $p = .022$), controlling for other factors, and were more likely to have been suspended or terminated from SSI or SSDI benefits due to work (odds ratio = 12.99, $p < .001$). Yet, total average earnings over the 13 years were low: $7,855 for the full SE group and $22,145 for SE earners, with large standard deviations around the means, and the benefits of SE diminished over time. By 2012, about 5% of both groups were employed.

Even with the positive outcomes most SE studies report, room for improvement remains. After 12 to 18 months, only about one half to two thirds of treatment participants found competitive work. For those who did, jobs were part-time, job duration was short, and earnings were relatively low (Bond et al., 2008; Marshall et al., 2014; Twamley et al., 2003). Frey et al. (2011), for example, reported that among treatment participants who worked at least one competitive job, gaining employment took seven months and participants worked, on average, approximately 20 hr a week for 9 months, earning $200 a week, or about $11.36 per hour. Among those with any positive earnings (59%), 8% earned more, on average, than the Social Security Administration (SSA) threshold for substantial gainful activity (SGA; $1,000 per month), a rate equivalent in the control group. This rate is consistent with research on the general SSDI population that finds very few people leave the disability rolls by working at jobs with earnings above SGA (Stapleton, Liu, Phelps, & Prenovitz, 2010). These limitations raise the question of how SE could be enhanced to improve employment outcomes for those with serious and persistent mental illness, and direct researchers and policymakers to those whose

Table 2
Evidence for Improving Employment Outcomes Through Supported Employment: Studies Included in Systematic Reviews

Systematic review source(s)	Study author	Study design[a]	Intervention (sample size)[b]	Comparison (sample size)[b]	Notable sample characteristics[b]	Results (intervention vs. comparison)[a]
Twamley et al. (2003)	Bond et al. (1995)	RCT	*SE* (n = 74, incl. both T and C groups)	4 months prevocational training, followed by SE	Avg. age: 35 Schizophrenia spectrum: 66% ≥HS education: 59%	During 12 months Competitively employed: 56% vs. 29% (e.s. = .58) Annualized weeks worked: 9 vs. 3 Wages earned: $1,525 vs. $574 SE similar to control group in rehospitalization rate
Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014)	Bond et al. (2007)	RCT	IPS (n = 92)	Diversified placement approach (n = 95)	Avg. age: 40 Schizophrenia spectrum: 63%	During 24 months Competitively employed: 75% vs. 34%[c] Days to first competitive job:156 vs. 193 Annualized weeks worked competitively: 16 vs. 8 Annualized weeks worked competitively among those who worked: 22 vs. 24 Weeks worked at longest competitive job: 37 vs. 33 Competitively employed ≥ 20 hr/wk: 47% vs. 23%
Twamley et al. (2003)	Bond and Dincin (1986)	RCT	"Accelerated" transitional employment (immediate placement in paid work group; n = 107 across T and C groups)	"Gradual" transitional employment	Age: 68% ≥21 Schizophrenia spectrum: 55% ≥HS education: 80%	During 15 months Competitively employed: 20% vs. 7% (e.s. = .39) Any employment:41% vs. 25% (e.s. = .36) Weeks worked during months 9–15: 11 vs. 7 Wages earned during months 9–15: $790 vs. $494 SE similar to control group in rehospitalization rate
Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014)	Burns et al. (2007)	RCT	IPS (n = 156)	Traditional vocational services (n = 156)	Not reported in systematic review	During 18 months Competitively employed: 55% vs. 28%[c]
Twamley et al. (2003)	Chandler et al. (1996)	RCT	ACT+ vocational specialist (n = 102 urban, 115 rural)	Community mental health services as usual (n = 108 urban, 114 rural)	Age: 30% over age 45 Schizophrenia spectrum: 61%	During 36 months Any employment, urban site: 73% vs. 15% (e.s. = 1.37) Any employment, rural sites: 29 vs. 11% (e.s. = .36)

Table 2 (*continued*)

Systematic review source(s)	Study author	Study design[a]	Intervention (sample size)[b]	Comparison (sample size)[b]	Notable sample characteristics[b]	Results (intervention vs. comparison)[a]
Twamley et al. (2003); Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014)	Drake et al. (1996)	RCT	IPS (n = 73)	Nonintegrated group skills training (n = 67)	Avg. age: 37 Schizophrenia spectrum: 47% ≥HS education: 74%	During 18 months Competitively employed: 78% vs. 40% (e.s. = .84)[c] Weeks worked at longest competitive job: 10 vs.10 Hours worked competitively: 607 vs. 205 (e.s. = .60) Competitively employed ≥ 20 hr/wk: 47% vs. 22% Competitive wages earned: $3,394 vs. $1,078 (e.s. = .55) IPS mean hourly wages: $5.59/hr IPS similar to control group in nonvocational outcomes.
Twamley et al. (2003); Bond et al. (2008); Marshall et al. (2014)	Drake et al. (1999)	RCT	IPS (n = 74)	Sheltered workshop (n = 76)	Participants were from an inner city Avg. age: 39 Schizophrenia spectrum: 67% ≥HS education: 50%	During 18 months Competitively employed: 61% vs. 9% (e.s. = 1.29)[c] Any employment: 74% vs. 89% (e.s. = −.40) Days to first competitive job: 126 vs. 293 Annualized weeks worked competitively: 10 vs. .8 Annualized weeks worked competitively among those who worked: 17 vs. 9 Competitively employed ≥ 20 hr/wk: 46% vs. 5% IPS mean job duration: 16.5 weeks PS mean wage: $5.82/hr IPS similar to control group in nonvocational outcomes
Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014)	Gold et al. (2006)[e]	RCT	IPS + ACT[d] (n = 66)	Sheltered workshop (n = 77)	Age: 77% ages 26–45 (T), 64% (C) Schizophrenia spectrum: 74% (T), 62% (C) ≥HS education: 52%	During 24 months Competitively employed: 64% vs. 26%[c] Days to first competitive job: 133 vs. 322 Annualized weeks worked competitively: 10 vs. 3 Annualized weeks worked competitively among those who worked: 16 vs. 11 Weeks worked at longest competitive job: 19 vs. 20
Marshall et al. (2014)	Heslin et al. (2011)	RCT	IPS (n = 93)	Usual care (n = 95)	Data not reported	IPS participants were significantly more likely to obtain competitive employment

(*table continues*)

Table 2 (*continued*)

Systematic review source(s)	Study author	Study design[a]	Intervention (sample size)[b]	Comparison (sample size)[b]	Notable sample characteristics[b]	Results (intervention vs. comparison)[a]
Marshall et al. (2014)	Hoffmann et al. (2012)	RCT	IPS (n = 46)	Traditional vocational rehabilitation (54)	Avg. age: 33.5 Schizophrenia: 39% 76% completed vocational training or have college degree	58.7% of SE group were ever competitively employed, compared with 25.9% of control In Year 2, SE group employed for 24.5 weeks vs. 10.2 for controls At 24 months, 45.7% of SE group were still competitively employed vs. 16.7% of controls
Kinoshita et al. (2013)	Howard et al. (2010)	RCT	IPS (n = 109)	Existing psycho-social rehab and day care (n = 110)	Avg. age: 38.3 Ethnicity: 37.4% White, 42.9% Black Duration of SMI: over 2 years	Results not reported separately. Authors also note that fidelity to IPS was low due to low rate of engagement
Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014)	Latimer et al. (2006)	RCT	IPS (n = 75)	Traditional vocational services (n = 74)	Avg. age: 40 Schizophrenia spectrum: 68% in treatment, 84% in control >12 years education: 43%	During 12 months Competitively employed: 47% vs. 18%[c] Days to first competitive job: 84 vs. 89 Annualized weeks worked competitively: 17 vs. 14 Annualized weeks worked competitively among those who worked: 25 vs. 27 Weeks worked at longest competitive job: 15 vs. 13
Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014); Twamley et al. (2003)	Lehman et al. (2002)[e]	RCT	IPS (n = 113)	Psychosocial rehabilitation (with vocational services for 33%; n = 106)	Avg. age: 42 Schizophrenia spectrum: 75% ≥HS education: 51%	During 24 months Competitively employed: 27% vs. 7% (e.s. = .54)[c] Any employment: 42% vs. 11% (e.s. = .73) Days to first competitive job: 164 vs. 287 Annualized weeks worked competitively: 6 vs. 1.6 Annualized weeks worked competitively among those who worked: 14 vs. 14 Weeks worked at longest competitive job: 22 vs. 23 IPS mean job duration: 14.4 weeks IPS mean wage: $5.07/hr
Twamley et al. (2003)	McFarlane et al. (1996)	RCT	FACT (n = 37)	ACT + crisis family intervention (n = 31)	Avg. age: 30 Schizophrenia spectrum: 100% ≥HS education: 51%	During 24 months Competitive employment: 10% vs.10% Any employment: 32% vs. 19% (e.s. = .52)

Table 2 (*continued*)

Systematic review source(s)	Study author	Study design[a]	Intervention (sample size)[b]	Comparison (sample size)[b]	Notable sample characteristics[b]	Results (intervention vs. comparison)[a]
Twamley et al. (2003)	McFarlane et al. (2000)	RCT	FACT + vocational specialist (provided for first 1–2 months; $n = 37$)	Enhanced VR (counselor ensured and monitored service use; $n = 32$)	Avg. age: 33 Schizophrenia spectrum: 65% ≥HS education: 89%	During 18 months Competitively employed: 46% vs. 19% (e.s. = .60) Any employment: 84% vs. 57% (e.s. = .43) Median competitive job duration: 12 vs. 4.5 months (n.s.) Wages earned: $755 vs. $214 FACT mean wage: $6.34/hr Among schizophrenia patients, SE similar to control group in rehospitalization rate and medication adherence
Marshall et al. (2014)	Michon et al. (2011)	RCT	IPS ($n = 71$)	Traditional vocational services ($n = 80$)	Data not reported	IPS participants significantly more likely to find competitive work and work more weeks
Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014)	Mueser et al. (2004)[e]	RCT	IPS ($n = 68$)	(i) Brokered SE, (ii) Psychosocial rehab, or (iii) groups (i) and (ii) combined ($n = 136$)	Avg. age: 42 Schizophrenia spectrum: 77%	During 24 months Competitively employed: 74% vs. (i) 28% and (ii) 18%[c] Days to first competitive job: 197 vs. (iii) 277 Annualized weeks worked competitively: 15 vs. 2 Annualized weeks worked competitively among those who worked: 20 vs. 10 Weeks worked at longest competitive job: 26 vs. 4 Competitively employed ≥20 hr/wk: 34% vs. (iii) 9%
Twamley et al. (2003)	Okpaku et al. (1997)	RCT	Case management + vocational specialist (provided for first 4 months; $n = 73$)	Services as usual ($n = 79$)	All participants were applying for or receiving SSI/DI. Avg. age: 37 Schizophrenia spectrum: 38% Avg. education: 11.5 years	During 24 months Any employment: 51% vs. 35% (n.s.)
Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014)	Twamley et al. (2008)	RCT	IPS ($n = 28$)	Referral to VR ($n = 22$)	Avg. age: 50 All participants were 45 or older Schizophrenia spectrum: 100%	During 12 months Competitively employed: 57% vs. 27%[c]
Kinoshita et al. (2013)	Tsang et al. (2009)	RCT	Integrated SE ($n = 52$); IPS ($n = 56$)	Traditional vocational rehabilitation ($n = 55$)	Avg. age: 34.6 SMI unemployed and willing to work; completed primary education	Results not reported separately

(*table continues*)

Table 2 (*continued*)

Systematic review source(s)	Study author	Study design[a]	Intervention (sample size)[b]	Comparison (sample size)[b]	Notable sample characteristics[b]	Results (intervention vs. comparison)[a]
Bond et al. (2008); Kinoshita et al. (2013); Marshall et al. (2014)	Kin Wong et al. (2008)	RCT	IPS (n = 46)	Stepwise conventional vocational services (n = 46)	Avg. age: 33 Schizophrenia spectrum: 32% ≥HS education: 22%	During 18 months Competitively employed:70% vs. 29%[c] Days to first competitive job: 72 vs. 118 Annualized weeks worked competitively: 13 vs. 7 Annualized weeks worked competitively among those who worked: 19 vs. 25

Note. Results based on subsamples of those who worked competitively are likely biased upwards. Unless otherwise indicated, Kinoshita et al. (2013), Marshall et al. (2014), Bond et al. (2008), and Twamley et al. (2003) did not report statistical significance. N/A = not applicable; RCT = randomized controlled trial; SE = supported employment; HS = high school; IPS = Individual Placement and Support; ACT = assertive community treatment; FACT = Family-Aided Assertive Community Treatment; VR = vocational rehabilitation; SSI = Supplemental Security Income; DI = Social Security Disability Insurance; SMI = serious mental illness; e.s. = effect size; n.s. = difference is not significant.

[a] We did not obtain and review most of the individual articles included in the systematic reviews. We report data for each study as reported in the review. Information on study design and results are shown as reported by Marshall et al. (2014), Kinoshita et al. (2013), Bond et al. (2008), and/or Twamley et al. (2003). We reviewed studies focused on the three groups of interest and report results in Tables 4 through 6. [b] Sample sizes and notable characteristics not reported in Marshall et al. (2014), Kinoshita et al. (2013), Bond et al. (2008), and Twamley et al. (2003) were extracted from the original articles. [c] Bond et al. (2008) reported that the treatment-control difference was significant but did not report the level of significance (p-value). [d] Gold et al. (2006) identifies the intervention as IPS with ACT. [e] This study is part of the EIDP; results for the full study are reported in Table 3.

Table 3
Evidence for Improving Employment Outcomes Through Supported Employment: Studies Reviewed by Authors

Study author	Study design	Intervention (sample size)	Comparison (sample size)	Notable sample characteristics	Results (intervention vs. comparison)
Frey et al. (2011)	RCT	IPS + medication management (n = 1,004)	List of available local and national services (n = 1,051)	Participants were DI beneficiaries with schizophrenia, bipolar disorder, or depression between 18 and 55 years of age residing within a 30-mile radius of one of 23 study sites. Avg. age: 47 Schizophrenia spectrum: 30% ≥HS education: 88%	During 24 months Competitively employed: 53% vs. 33% ($p < .001$) Total months employed: 6.2 vs. 3.7 ($p < .001$) Weekly earnings at main job: $117 vs. $76 ($p < .001$) Among those who worked competitively Total months employed: 9.3 vs. 8.4 ($p = .017$) Months to first job: 7.7 vs. 7.2 ($p = .107$) Hours worked per week at main job: 20 vs. 19 ($p = .097$) Weekly earnings at main job: $201 vs. $193 ($p = .060$) Highest hourly wage: $11.36 vs. $11.54 ($p = .645$)
Hoffmann et al. (2014)	RCT: 5-year follow-up to Hoffmann et al. (2012) cited above	IPS (n = 46)	Other vocational services (n = 54)	Avg. age: 33.5 Schizophrenia: 39% 76% completed vocational training or have college degree	Analyzed at 5 year follow-up: IPS = 39, control = 49 Among those employed at least 50% 130 weeks in competitive employment: 43% vs. 11% ($p < .001$) Still employed at 5 years: I37% vs. 9% ($p < .001$)
Macias et al. (2006)	RCT	SE + ACT (n = 63)	Clubhouse (n = 58)	Sample characteristics and results represent the participants who expressed interest in working Avg. age: 36 years old in ACT, 40 years old in clubhouse Schizophrenia spectrum: 60% ACT, 43% clubhouse ≥HS education: 61%	During 24 months Competitively employed: 64% in ACT and 47% in clubhouse (n.s. at $p \leq .05$) Among those who worked competitively Days employed competitively: 173 vs. 264 (mean); 98 vs. 199 (median) ($p < .05$) Total hours worked competitively: 592 vs. 784 (mean); 234 vs. 494 (median) ($p < .05$) Competitive wages earned: $3,948 vs. $6,202 (mean); $1,252 vs. $3,456 (median) ($p < .05$)

(*table continues*)

Table 3 (*continued*)

Study author	Study design	Intervention (sample size)	Comparison (sample size)	Notable sample characteristics	Results (intervention vs. comparison)
Cook et al. (2005)	Summary of cross-site results from studies of EIDP, a large, multisite RCT	Several SE models including IPS, FACT, ACT, and clubhouse	Services as usual or weaker versions of the intervention	1,273 participants were randomly assigned in seven states Avg. and median age: 38 Schizophrenia spectrum: ~50% ≥HS education: ~67%	During 24 months Competitively employed: 55% vs. 34% ($p < .001$) Worked ≥40 hr per month: 51% vs. 39% ($p < .001$) Monthly earnings: $122 vs. $99 ($p = .04$) In a sample of DI-qualified participants, 4% earned enough to complete their trial work period and exit DI. Factors significantly associated with better work outcomes include Demographic factors: being younger, female, Hispanic/Latino, better work history, a high school or college education. Clinical factors: high self-rated functioning, fewer recent psychiatric hospitalizations, lower levels of psychiatric symptoms. SE service factors: job-development services; high degree of integration with clinical services; ongoing job support was not associated with the total number of hours worked, but was associated with significantly longer tenure for a first competitive job.

Table 3 (*continued*)

Study author	Study design	Intervention (sample size)	Comparison (sample size)	Notable sample characteristics	Results (intervention vs. comparison)
Bond et al. (2008)[a]	Systematic review with meta-analysis	IPS	Control groups received treatment as usual (typically referral to VR) or alternative vocational models; 2 studies compared IPS to nonintegrated SE	Reviewed 11 RCTs with high model fidelity Eligibility criteria across studies: adults who met criteria for SMI, unemployed at intake, expressed desire to work (in all but one of the studies), absence of significant medical condition	Results from pooled analysis (study periods differed) Competitively employed in 11 RCTs: 61% vs. 23%* Days to first competitive job in seven RCTs: 138 vs. 206 Annualized weeks worked in seven RCTs: 12 vs. 5 Annualized weeks worked among those who obtained competitive employment in seven RCTs: 19 vs. 19 Worked ≥20 hr per week in four RCTs: 44% vs. 14% Weeks worked at longest competitive job in six RCTs: 22 vs. 16
Campbell et al. (2011)[a]	Nonsystematic review with meta-analysis	IPS (n = 307)	Group skills training, enhanced VR, psychosocial rehabilitation, or diversified placement (n = 374)	Reviewed four RCTs of high-fidelity IPS models	Effect sizes calculated based on 13 demographic or clinical characteristics for three outcomes ranged from: .67–1.42 for competitive employment; .50–1.06 for weeks worked; and .47–1.09 for job tenure. Effect sizes were significant ($p \leq .05$) for all but two subgroups—those who are married or living with a partner, and those who are divorced, separated or widowed—and most were considered large (>.70) There were few instances in which one subgroup appeared to benefit more from IPS than another group. For example, those who had more than a high school degree showed less improvement with IPS than those with less education

(*table continues*)

Table 3 (*continued*)

Study author	Study design	Intervention (sample size)	Comparison (sample size)	Notable sample characteristics	Results (intervention vs. comparison)
Twamley et al. (2003)[a]	Systematic review with meta-analysis	SE, IPS	Prevocational training, skills training, sheltered workshop, vocational rehab	Reviewed six RCTs of SE	Results from pooled analyses (study periods differed) Competitively employed in five studies: 51% vs. 18% (weighted mean e.s. = .79) SE participants were four times more likely to obtain competitive employment (Odds ratio = 4.14, 95% CI [1.73 to 9.93]).

Note. Unless otherwise indicated, statistical significance was not reported. Results based on subsamples of those who worked competitively are likely biased upwards. N/A = not applicable; RCT = randomized controlled trial; IPS = Individual Placement and Support; DI = Supplemental Security Disability Insurance; SE = supported employment; ACT= assertive community treatment; EIDP = Employment Intervention Demonstraton Program; FACT = Family-Aided Assertive Community Treatment; HS = high school; VR = vocational rehabilitation; SMI = serious mental illness; e.s. = effect size; QED = quasi-experimental design.

[a] Twamley et al. (2003) and Bond et al. (2008) reviewed three of the same studies, and all four studies reviewed in Campbell et al. (2011) are reported in Bond et al. (2008). Because of this overlap, pooled results should be considered a general picture of evidence and not thought of as wholly distinct findings.

[*] Significant; *p*-value not reported.

conditions are not yet severe or chronic but who might be on the path toward long-term disability.

Evidence for Services to Individuals, Including Youth, Experiencing a First Episode of Psychosis and Likely to Require Early Intervention Services

With financial support from the community mental health services block grant program administered by the Substance Abuse and Mental Health Services Administration, a growing number of U.S. states—32 as of late 2015—are implementing coordinated early intervention programs to treat individuals before or soon after a first episode of psychosis (Insel, 2015). Functional and clinical recovery, and avoidance of long-term disability or vulnerability, are the typical goals (McFarlane et al., 2012). Programs tend to adapt standard community mental health services designed for those with chronic mental illness to identify and appeal to a younger and nonchronic population. Many comprehensive early intervention models incorporate interdisciplinary teams of early intervention specialists and offer recovery-oriented psychotherapy, family psychoeducation and support, pharmacotherapy, primary care coordination, case management, and SE and supported education (CMS, 2015).

Limited evidence favors early intervention services with an employment component over generic community mental health services. Four studies (see Table 4) compared early intervention specialty services to generic services targeting the general population of mental health service users (which may or may not offer employment support). The results overall favor comprehensive early intervention, but not overwhelmingly so. First, an important new study from the National Institute of Mental Health's Recovery After an Initial Schizophrenia Episode (RAISE) demonstration compared comprehensive early intervention services with SE and education to usual community care (Kane et al., 2016). The RAISE study is significant for its scale and rigor: a clustered randomized trial that randomized 34 community mental health centers with more than 400 individuals in 21 states. Among the treatment group, the proportion of participants in any school or work grew from approximately 32% to 45% from baseline to the 24-month follow-up, compared with gains from approximately 41% to 44% among the control group. Although the gains were significantly greater for the treatment group, significantly fewer treatment group members were attending school at baseline. The positive impact on schooling or employment at follow-up, therefore, may be a reflection of the baseline differences. A long-term follow-up study will report on 5-year outcomes.

Garety et al. (2006) found that individuals who were randomized to receive early intervention services were significantly more likely to spend 6 months or more of the 18-month follow-up period engaged in work or education compared with controls (49% vs. 29%). However, at 18-month follow-up, only one third of the early intervention group was employed or in school full-time, and this rate was not significantly higher than that of the control group.

The Early Detection, Intervention, and Prevention of Psychosis Program (EDIPPP) expanded a psychosis-prevention model to six sites around the U.S. EDIPPP offered family aided assertive community treatment (FACT) modified for early intervention (McFarlane et al., 2015). Family intervention was the principal treatment component, but the treatment package also included supported

Table 4
Evidence for Improving Employment Outcomes After a First Episode of Psychosis Through Early Intervention

Study	Study design	Service type (sample size)	Comparison (sample size)	Notable baseline sample characteristics	Results (intervention vs. comparison)
Comprehensive EI with a vocational component vs. generic community mental health services					
Kane et al. (2016)	Cluster RCT (clustered by clinic)	Comprehensive EI services with SE/E (NAVIGATE; n = 17 sites, 223 individuals)	Usual community mental health services (17 sites, 181 individuals)	Avg. age: 23 Schizophrenia spectrum: 89% NAVIGATE, 90% comparison Median duration of untreated psychosis: 66 weeks NAVIGATE, 88 weeks comparison	Any work or school during the 24-month intervention Baseline: ~32% vs. ~41% 12 months later: ~39% vs. ~43% 24 months later: ~45% vs. ~44% Gains were significantly greater for NAVIGATE (group by time interaction: p = .044). However, significantly fewer NAVIGATE members were attending school at baseline.
Garety et al. (2006)	RCT	Comprehensive EI services w/occupational therapist (Lambeth Early Onset team; n = 67)	Generic community mental health services with occupational therapist (n = 65)	Avg. age: 26 Schizophrenia spectrum: 69%	18 months later Employed FT or in education FT: 33% vs. 21% (p = .149) Employed or in education ≥ 6 months: 49% vs. 29% (p = .019) Avg. months employed or in education: 6.9 vs. 4.2 (p = .008)
McFarlane et al. (2015)	QED (RDD)	FACT with SE/E (n = 170)	Monthly phone monitoring and usual community services (n = 57)	Avg. age: 17	Baseline In school only: 70% vs. 70% Employed only: 3% vs. 7% In school and employed: 11% vs. 11% 24 months later In school only: 54% vs. 53% Employed only: 11% vs. 18% In school and employed: 18% vs. 9%

(*table continues*)

Table 4 (*continued*)

Study	Study design	Service type (sample size)	Comparison (sample size)	Notable baseline sample characteristics	Results (intervention vs. comparison)
Fowler et al. (2009)	QED	Comprehensive EI services with occupational therapist (SE mentioned) ("EI" $n = 102$)	Generic community mental health services ("no EI" $n = 82$); and generic mental health coupled with an SE worker ("partial EI" $n = 69$). No vocational support mentioned.	Avg. ages: 22, 23, 25, for "EI," "No EI," and "Partial EI" Schizophrenia spectrum: 69% in "EI," 43% in "No EI" ("Partial EI" not reported)	1 year later (as measured during assessment month) Employed, volunteering, or in school $\geq$ 8 hr/week: 40% EI vs. 24% partial EI ($p = .05$) 2 years later (as measured during assessment month) Competitively employed $>$ 15 hr/week or in education FT: 44% EI vs. 15% No EI ($p < .001$) Employed, volunteering, or in education 8–15 hr/wk: 8% EI vs. 0 % No EI ($p < .001$)
		Comprehensive EI with a vocational component vs. comprehensive EI, no vocational component			
Killackey (2012)	RCT	Comprehensive EI services with IPS (EPPIC; $n = 73$ at baseline, 68 at 6 months)	Comprehensive EI services (EPPIC; $n = 73$ at baseline, 59 at 6 months)	Avg. age: 20 Schizophrenia: 38% IPS, 37% comparison	Baseline Employed: 22% vs. 11% In education (PT or FT): 16% vs. 19% During 6-month intervention period Employed: 72% vs. 48% ($p = .005$) In education: 54% vs 41% ($p = .149$) Employed and/or in education: 88% vs. 72% ($p = .023$)

Table 4 (*continued*)

Study	Study design	Service type (sample size)	Comparison (sample size)	Notable baseline sample characteristics	Results (intervention vs. comparison)
Dudley et al. (2014)	QED	Comprehensive EI services with IPS (n = 76 at baseline, 104 at 12 months, 104 at 18 months)* (* Sample sizes increased over time due to the entrance of new participants and exit of others)	Comprehensive EI services (n = 79 at baseline, 90 at 12 months, 101 at 18 months)	Avg. age: 24 EI + IPS, 25 EI	Baseline Employed FT: 8% vs. 4% Employed PT: 4% vs. 3% In education FT or PT: 12% vs. 18% Total employed, in education or volunteering: 25% vs .24% 12 months later (at end of intervention) Employed FT: 13% vs. 12% Employed PT: 5% vs. 1% In education FT or PT: 17% vs. 9% Total employed, in education or volunteering: 38% vs.22% (p = .02) 18 months later (6 months postintervention) Employed FT: 7% vs. 9% Employed PT: 7% vs. 5% In education FT or PT: 11% vs. 13% Total employed, in education or volunteering: 26% vs. 29% (p = .69)
Major et al. (2010)	QED	Comprehensive EI services with SE/E (VIBE; n = 44, including four who declined VIBE treatment)	Comprehensive EI services, no vocational support mentioned (n = 70)	Avg. age: 24 Schizophrenia spectrum: 63%	Baseline Competitively employed: 14% vs. 14% In education: 14% vs. 17% During past 12 months Competitively employed: 36% vs. 19% In education: 20% vs. 24%

(*table continues*)

Table 4 (*continued*)

Study	Study design	Service type (sample size)	Comparison (sample size)	Notable baseline sample characteristics	Results (intervention vs. comparison)
					Access to VIBE was a significant predictor of attaining employment/education in multivariate regression (*OR* = 3.53, 95% CI [1.25, 10.00], $p = .018$), as was education beyond a secondary level and being employed or in education at baseline; higher baseline functioning score and a diagnosis other than schizophrenia were not significant
		IPS vs. generic community mental health services			
Nuechterlein, Subotnik, Turner, et al. (2008) and Nuechterlein, Subotnik, Ventura, et al. (2008)	RCT	IPS + group training in work skills, with outpatient psychiatric treatment ($n = 69$)	Referral to VR + group training in medicine management and communication, and outpatient psychiatric treatment ($n = 18$)	Avg. age: 25 Schizophrenia spectrum: 100% Avg. duration of illness, including prodromal symptoms: 25 months	During the first 6 months Employed or in education: 83% vs. 41% ($p < .001$) At 18-month follow-up (12 months later) Employed or in education: 72% vs. 42%

Note. Unless otherwise indicated, statistical significance was not reported. EPPIC = Early Psychosis Prevention and Intervention Centre; EI = early Intervention; RCT = randomized controlled trial; SE/E = supported employment and supported education; FT = full time; QED = quasi-experimental design; RDD = regression discontinuity design; FACT = Family-Aided Assertive Community Treatment; SE = supported employment; IPS = Individual Placement and Support; PT = part time; VR = vocational rehabilitation.

Table 5
Evidence for Improving Employment Outcomes of Individuals at Risk of Job Loss

Study	Study design	Service type (sample size)	Comparison (sample size)	Notable sample characteristics	Results
Lerner et al. (2012)	RCT	The study examined a brief telephonic program utilizing vocational, medical, and psychological strategies to improve work functioning of employees with depression ($N = 59$).	Usual care ($N = 27$)	Participants were adult state government employees in Maine; employed 15 hr or more per week; diagnosed with major depressive disorder and/or dysthymia; and had at-work productivity loss of 5% or more in two weeks prior to enrollment.	For intervention participants scores on the WLQ assessment of the impact of health problems, work absence measures, and a depression severity measure, were significantly improved, whereas scores for control participants were worse or not significantly changed from baseline. In addition, the magnitude of the change (improvement) in all eight outcomes was significantly larger in the treatment group than in the usual care group.
Nieuwenhuijsen et al. (2008)	SR	The review examined work- and worker-directed interventions for reducing work disability of depressed workers.	11 RCTs	No work-directed interventions were included. Interventions were pharmacological (four studies), psychological (two), and combinations of the two (five).	The authors could not find any high quality studies of employer-level interventions. The review found limited evidence that clinical intervention can reduce sickness absence from work in depressed people. The authors conclude that depressed employees require work supports and accommodations in addition to clinic treatment in order to improve employment outcomes.
Krupa (2007)	NSR	The review examined employment interventions for individuals who experience mental illness.	The author developed a framework of individual-level intervention categories.	Employer-level interventions include routine screenings, education/awareness campaigns, and developing organizational frameworks conducive to good mental health.	The author did not find high-level evidence for employer-level interventions. There was more support for individual-level interventions, including clinical treatment, social-network development, and reasonable job accommodations.
Lauber and Bowen (2010)	NSR	The review examined interventions to promote keeping people with affective disorders working or to help them return to work.	The study reviewed interventions for people in five categories: mental health, people with an existing workplace, people without a workplace, employer-level interventions, and people with other than mental health problems.	Interventions included clinical treatment, case managers providing employees with appropriate supports, supervisor support, social support, and education and training.	The authors found a wealth of studies reporting on interventions to assist employees with affective disorders, but few that report employment outcomes. The research is even weaker for employer-level interventions. The authors conclude there is a large gap in the research evidence on this topic.

(*table continues*)

Table 5 (*continued*)

Study	Study design	Service type (sample size)	Comparison (sample size)	Notable sample characteristics	Results
Bohman et al. (2011)	RCT	The study examined Texas' DMIE program "wraparound" health services ($N = 888$).	Regular health care through Texas' Harris County Hospital District ($N = 697$)	Participants were low-income, working adults; predominately female (77%), middle-aged (mean age of 47), and minority (40% African American, 30% Hispanic); 11% diagnosed with serious mental illness.	Intervention participants were twice as likely to make any mental health visit (12% vs. 6%, significant at .01), and less likely to receive SSI/DI (6% vs. 8%). Intervention participants displayed no significant difference in employment, earnings outcomes, or mean SF-12 MCS scores.
Linkins et al. (2011)	RCT	The study examined Minnesota's DMIE program: a comprehensive set of health, behavioral health, and employment-support services, coordinated through a navigator ($N = 888$).	Usual care ($N = 267$)	Participants were working at least 40 hr/month, had mental illness diagnosis, and were not eligible for other state-sponsored public programs.	The intervention group maintained or improved ADL functioning compared to the control group. There was no significant difference in employment outcomes between groups, although lower-functioning participants from the control group displayed lower earnings than lower-functioning treatment-group members. Participants in the intervention who were more engaged with the program displayed significant improvements in mental health status.
Rost et al. (2004)	RCT	This study examined whether improving primary care depression management improves employment outcomes over 2 years ($N = 158$).	Usual care ($N = 168$)	Participants were employed patients who presented for routine visits at community primary care practices across the United States and screened positive for major depression. Participants were primarily female (85.0%), White (86.8%), and employed full time (77.8%).	The intervention group reported 6.1% greater productivity and 22.8% less absenteeism over the study period. These effects increased to 8.2% and 28.4%, respectively, for participants who were consistently employed over this time. The authors estimate an annual economic benefit associated with the increase in productivity for the consistently employed of $1,982 per depressed FTE. For this same group, the authors estimate an economic benefit associated with reduction in absenteeism of $619 per depressed FTE.
Wang et al. (2007)	RCT	The study examined a telephonic depression outreach, care management, and psychotherapy program on workplace outcomes ($N = 304$).	Usual care ($N = 300$)	Depressed workers 18 or over enrolled in a managed care program who worked for several large employers.	Scores on the Quick Inventory of Depressed Symptomology were significantly lower among treatment group members at 6 and 12 months; symptom improvement was significant at 12 months (30.9% vs. 21.6%). Hours worked were significantly higher, primarily due to job retention (92.6% vs. 88.0%).

Table 5 (*continued*)

Study	Study design	Service type (sample size)	Comparison (sample size)	Notable sample characteristics	Results
Whalen et al. (2012)	RCT	The DMIE program, interventions providing medical benefits and financial assistance for health care, although the specific packages of services varied in each of four states (N = 2,125). Only Minnesota and Texas intentionally focused on people with mental health.	Usual care, although control conditions vary by state (N = 1,299). Usual care, although control conditions vary by state (N = 1,299).	Sample characteristics varied by state. Participants in all states were primarily female. Minnesota, which focused specifically on individuals with mental health issues, had the lowest mean mental SF-12 score (35.0).	The evaluation of the DMIE program as a whole found no significant differences between the percent of treatment group participants and control group participants not employed by the end of the study period (which was either 12 or 24 months, depending on the state). The combination of Minnesota and Texas participants saw an insignificant increase in employment of .2 percent. The authors note that the only states to show statistically significant reductions in dependence on SSA benefits focused their interventions on a population with behavioral health problems.
Vuori et al. (2012)	RCT	The study examined in-company training program for employees of 17 organizations with the goal of enhancing career management, mental health, and job retention (N = 369).	Printed information about career and health-related issues (N = 349)	Participants were employees at medium- and large-sized organizations. Mean age was 50.1 years, 88% were female, and most had a degree beyond high school (60%).	At the 7-month follow-up period, the intervention group displayed significantly decreased depressive symptoms and intentions to retire compared with the control group.
Adler et al. (2006)	OS	This was a 3-year longitudinal observational study of 286 patients with *DSM-IV* major depressive disorder and/or dysthymia.	The comparison group included 93 individuals with rheumatoid arthritis, and 193 depression-free healthy control subjects.	At baseline, 25% of the depression group met the screening criteria for dysthymia and 75% met criteria for major depressive disorder and double depression. Mean number of symptoms was 2.9 for the dysthymia group, 4.8 for major depressive disorder, and 4.6 for double depression.	Employees undergoing treatment for depression had worse job-performance scores than healthy employees even after demonstrating clinical improvements in symptom severity. Specifically, the study identified persistent deficits in performance of mental-interpersonal tasks, time management, output, and physical tasks. The study concludes that, although clinical interventions improve mental health, additional workplace interventions may be required to improve the performance of depressed employees.
Burton et al. (2007)	OS	This was a retrospective observational cohort study of 2,112 employees with a new episode of treatment with an antidepressant medication.	1,301 employees adhered to acute-phase treatment, and 966 remained adherent to continuation-phase treatment.	The population was 76% female and 87% Caucasian; 1.8% of all employees had a short-term disability event due to depression/anxiety in pre-index period.	Adherent employees were significantly less likely to have any short-term disability absence (8.8%) compared with nonadherent employees (12.7%). In the continuation phase, 966 employees were adherent and 1,146 were nonadherent. Adherent employees were less likely to have any short-term disability absence than nonadherent employees (8.4% compared with 12%). Adherent employees were also less likely to have multiple short-term disability absences (.9%) than nonadherent employees (2.1%).

(*table continues*)

Table 5 (*continued*)

Study	Study design	Service type (sample size)	Comparison (sample size)	Notable sample characteristics	Results
Dewa et al. (2003)	OS	This was a retrospective observational cohort study of 1,281 employees at three major Canadian financial and insurance companies. The study examined adherence to treatment protocol.	Included employees had depression-related absences from work, used their prescription drug benefit during the study period, and did not have more than one short-term disability episode 1 year prior to baseline.	The study population was overwhelmingly female (88%), had a mean of 4.1 depression symptoms, and 46.5% had additional mental health conditions besides depression.	Employees who returned to work full time or part time reported significantly fewer symptoms than those who left employment or went on long-term disability benefits. Employees who went on long-term disability benefits were significantly less likely to fill any antidepressant prescriptions during a short-term episode (27.7%) than those who returned to work (47.3%) or those who left work and did not go onto long-term disability benefits (42.7%). An ordinary least squares regression model found that early intervention was significantly associated with a reduced length of disability episode ($\beta = -24.1$ days).

Note. RCT = randomized controlled trial; WLQ = Work Limitations Questionnaire; SR = systematic review; NSR = nonsystematic review; DMIE = Demonstration to Maintain Independence and Employment; SSI/DI = Supplemental Security Income or Social Security Disability Insurance; SF-12 MCS = Short Form 12 Item Health Survey, mental health composite summary; ADL = Activities of Daily Living; FTE = full-time equivalent; SSA benefits = Social Security Administration disability benefits; OS = observational study; *DSM-IV* = Diagnostic and Statistical Manual of Mental Disorders - 4th edition; QED = quasi-experimental design; EIDP = Employment Intervention Demonstration Program.

education and employment, along with elements of assertive community treatment and psychotropic medication. Treatment and comparison groups were formed through a risk-based allocation design (also known as regression-discontinuity). Individuals identified at baseline as being at higher risk of psychosis were assigned to receive FACT, and those at lower risk at baseline were assigned to receive standard community care. Thirty-seven percent of the comparison group received SE or supported education as part of standard care, potentially attenuating the results. Still, outcomes slightly favored the FACT group. Participation in either school, work, or both stayed level after 24 months for the FACT group (from 84% to 83%) but fell by nine percentage points (from 88% to 79%) for the comparison group (significance not reported). These averages, which are relatively high for both groups, mask substantial improvement for some and decline for others. Between baseline and 24 months, 21% of the treatment group started work or school or both, compared with 7% among controls.

Results were more promising in Fowler et al. (2009), which compared comprehensive early intervention with (a) generic mental health services and (b) SE added to the generic team. One-year postreferral, 40% of the early intervention cohort was competitively working or in school more than 15 hr per week during the assessment month, compared with significantly fewer (24%) of those who received SE with generic services. Two-years postreferral, 44% of the early intervention cohort were engaged in work or school more than 15 hr per week, significantly more than those in the generic-only group (15%).

Comprehensive early intervention with SE may lead to higher employment levels than early intervention alone. Three studies found promising results when they examined the addition of SE specialists into a comprehensive early intervention model. Existing early intervention services, which may or may not offer nonintegrated vocational supports, served as the comparisons. First, Killackey (2012) found that during a 6-month randomized trial for individuals experiencing a first episode of psychosis, employment among those receiving comprehensive early intervention plus IPS was 72%, compared with 48% among those receiving usual comprehensive early intervention services ($p = .005$). Significantly more treatment group members were also participating in a combination of employment and education during the 6-month intervention (88% vs. 72%), although these rates are high for both groups. The trial also conducted assessments at 12 and 18 months, but we could not locate published results from those assessments.

Major et al. (2010) also found support for the added benefit of SE. At any time during the first 12 months of intervention, 56% of people receiving integrated early intervention were competitively employed or in school, compared with 43% in the standard early intervention group. Access to early intervention with SE was a significant predictor of attaining employment or education in a multivariate regression that controlled for other tested significant predictors.

Examining how individuals fare after the removal of the employment support is highly policy-relevant. Immediate posttest outcomes were positive but not sustained in Dudley, Nicholson, Stott, and Spoors (2014), which compared early intervention with IPS offered in one service center to early intervention alone offered in a similar service center. After offering IPS for 12 months, significantly more people than in the comparison group

Table 6
Evidence for Improving Employment Outcomes of Long-Term Clients of Traditional Mental Health Services

Study author	Study design	Service type (sample size)	Comparison (sample size)	Notable sample characteristics	Results
Van Til et al. (2013)	SR	Interventions to maximize reintegration of workers with mental disorders into the workforce.	97 observational or experimental studies.	32 of 97 studies concerned reintegration; 10 of them were conducted in populations of veterans.	Limited knowledge exists about how to reintegrate people with mental disorders into a new workplace after an absence of more than a year. Knowledge specific to veterans is even more limited.
Davis et al. (2012)	RCT	IPS model described in *A Working Life for People With Severe Mental Illness* ($n = 42$).	Standard VR program ($n = 43$)	Veterans at the Tuscaloosa Veterans Affairs Medical Center ages 19–60 with a diagnosis of PTSD, a medical clearance to work, and who are currently unemployed and interested in competitive employment.	The study group was 2.7 times more likely to gain competitive employment. Other employment outcomes, including time worked and total earnings, also favored the study group. These findings were statistically significant and are consistent with previously reported advantages of IPS over traditional VR programs.
Michalopoulos et al. (2011) and Weathers and Bailey (2014)	RCT	DI beneficiaries with no health insurance received health insurance, medical care management, employment and benefits counseling and PGAP for new DI recipients; $n = 611$; 22% had mental disorders, including individuals with psychiatric disabilities.	AB group received only health benefits package ($n = 400$) and new DI recipients with no intervention ($n = 986$).	Newly entitled DI beneficiaries who were approved at their initial medical determination ages 18–54 with at least 18 months before the start of their entitlement to Medicare and who resided in one of the 53 metropolitan areas included in the demonstration.	The AB Plus group participated in vocational services at a greater rate during all 3 years of follow-up, and was employed at a greater rate and earned more on average during the second year after random assignment. These results disappeared at the third year follow-up. Results were statistically significant.

(*table continues*)

Table 6 (*continued*)

Study author	Study design	Service type (sample size)	Comparison (sample size)	Notable sample characteristics	Results
Burt (2012)	QED	Housing assistance, employment case management, case coordination by an employment specialist, work supports such as training and uniforms, and linkages to workforce development centers provided at one of three Los Angeles County community mental health centers (n = 56).	Homeless individuals with serious mental illness receiving nonprogram services at one of the other 15 Los Angeles County community mental health centers (n = 415).	All participants qualified for county mental health services, usually with a diagnosis of schizophrenia or affective disorder, and were homeless at enrollment. Propensity score matching was used to compare groups.	The treatment group had an employment participation rate (57% vs. 22%) and competitive employment rate (27% vs. 13%) more than double that of the comparison group. Treatment-group participants were more likely to work full time rather than part time and less likely to have had no employment at all while in the program. Of those who did gain employment, the treatment group took fewer days to do so and worked more days in competitive employment after they did. Approximately half of the overall days worked by treatment-group participants were in competitive employment. Some but not all of the observed employment outcomes may, in fact, be attributable to improved housing outcomes rather than to a specific employment intervention.
Gao et al. (2009)	Pre-post	In-house SE services (n = 60)	n/a	Clients with SMI at a supportive housing agency in New Jersey, including individuals with long histories of hospitalizations.	The competitive employment rate doubled to 26% after 12 months and remained above 50% after 24 months. Another 18% had returned to school or participated in job training at the end of 3 years.

Table 6 (*continued*)

Study author	Study design	Service type (sample size)	Comparison (sample size)	Notable sample characteristics	Results
Rosenheck and Mares (2007)	Pre-post/implementation study.	IPS (n = 321)	Services received prior to implementation of IPS (n = 308).	Homeless veterans who were not receiving VA health services, expressed interest in seeking competitive employment, and were diagnosed as having a psychiatric or substance-abuse problem.	Controlling for baseline differences, the post-implementation group engaged in an average of 15% more days of competitive employment over the 2-year follow-up period. The study's authors conclude that a low-intensity training approach can successfully implement an IPS program in a system previously unfamiliar with the approach and show improved employment outcomes.
Anthony (2006)	Descriptive	SE (n = 37)	Individuals with severe and persistent mental illness who received SE services but had no forensic involvement (n = 1,236).	No significant background differences between those with recent forensic involvement and those without. Those with forensic involvement were more likely to have worked in the previous 5 years, less likely to have a diagnosis of schizophrenia, and to have had significantly higher levels of positive and general symptoms.	In this unpublished and exploratory analysis, forensic involvement was a nonsignificant indicator for all employment outcomes for individuals with severe and persistent mental illness receiving SE services in the EIDP. The implication is that SE may be an effective employment intervention for the forensically involved because that population enjoyed the same employment gains in the EIDP as those without forensic involvement.
Marrone (2005)	Descriptive	Blend of SE and ACT (n = 791)	n/a	Homeless individuals in Vancouver, Washington, identified in shelters and at transitional housing sites with a "zero reject" approach.	The goal for the 5-year program was to engage 250 clients, develop 175 personal career plans or vocational profiles, and help 75 participants secure employment. After 39 months, 791 clients had been engaged, 543 vocational profiles developed, and 129 participants had secured employment.

(*table continues*)

Table 6 (*continued*)

Study author	Study design	Service type (sample size)	Comparison (sample size)	Notable sample characteristics	Results
Twamley et al. (2013)	Descriptive	SE (n = 1,694)	Veterans with mental illness or TBI who received no-SE vocational services (n = 4,651)	Veterans of Operations Iraqi Freedom and Enduring Freedom with PTSD, depression, SUD, or TBI.	This analysis of two large VA administrative datasets found that SE has a statistically significant effect on employment outcomes in comparison to other vocational interventions for the sample population.

Note. SR = systematic review; RCT = randomized controlled trial; IPS = Individual Placement and Support; VR = vocational rehabilitation; PTSD = posttraumatic stress disorder; DI = Supplemental Security Disability Insurance; PGAP = Progressive Goal Attainment Program; AB = Accelerated Benefits demonstration project; QED = quasi-experimental design; SE = supported employment; SMI = serious mental illness; VA = Veterans Affairs; EIDP = Employment Intervention Demonstration Program; ACT = Assertive Community Treatment; TBI = traumatic brain injury; SUD = substance use disorder; ICM = intensive case management; HWVP = Homeless Women Veteran Program.

were employed, in education, or volunteering, but the impact disappeared 6 months after services ended.

Another study found benefits to SE while calling into question the necessity of early intervention specialty care (Nuechterlein, Subotnik, Turner, et al., 2008; Nuechterlein, Subotnik, Ventura, et al., 2008). The study examined the effectiveness of integrating SE into generic community mental health services for patients experiencing a first episode. Individuals with a first episode or recent onset of psychosis were randomly assigned to receive SE and a group-based work skills training, while the controls received referrals to traditional vocational rehabilitation services provided by a number of agencies, group-based communication skills, and medication management. During the first 6 months of the program, significantly more individuals in the SE group had obtained or returned to employment or school than in the control group (83% vs. 41%). At the end of the 18-month intervention, at which point treatment intensity had faded, 72% of the SE group was employed or in school, compared with 42% of controls. However, this is just one study and because our review did not consider the clinical benefits of early intervention, this conclusion should not be interpreted as evidence against the effectiveness of early intervention.

Evidence for Services to Prevent Job Loss Due to Mental Illness

Individuals with mental illness face several challenges in the workforce that healthy workers may not encounter. For these employees, the ability to modify job tasks, work flexible hours, and reduce work-related stress may be essential to maintaining long-term employment (Nieuwenhuijsen et al., 2008). A variety of supports may be put in place to help such workers maintain their current employment and avoid entry into SSA disability benefit programs. Strategies to implement these supports generally fall into two categories: (a) individual or worker level interventions in which treatments are geared toward helping the individual and (b) employer-level interventions, which are intended to be implemented by employers and focus on how the workplace itself can be constructed to promote mental health and prevent work disability (Krupa, 2007). This section reports on the literature pertaining to such interventions (see Table 5).

A federal demonstration did not improve the earnings of workers with mental illness but did reduce the incidence of SSA disability benefit receipt. The CMS Demonstration to Maintain Independence and Employment (DMIE) was established to determine whether health-related early intervention strategies implemented by states could delay or prevent reliance on disability benefits and reduce job loss for working adults with disabilities. These RCT demonstrations enrolled adults aged 18 to 62 who worked at least part-time and were not receiving SSI or SSDI benefits. The DMIE was implemented in four states, two of which focused on individuals with mental illness. In Minnesota, 888 intervention participants received care coordination, job placement, intensive employment-needs assessment and other employment services. In Texas, the intervention participants received enhanced mental health services, substance-abuse assessment and referral services, and enhanced medical services. Employment and earnings outcomes did not significantly differ between the intervention and control groups, with few exceptions. In Minnesota, low-functioning control group members reported a decrease in

income, suggesting that the intervention may have ameliorated a decline among low-functioning participants. In Texas, intervention group members who were more engaged with the program were significantly less likely to receive SSDI benefits than participants who were less engaged (Bohman et al., 2011; Linkins et al., 2011). The pooled analysis of Minnesota and Texas intervention participants showed some evidence that the medical services DMIE provided decreased the adverse effect of mental illness on earnings for highly engaged, low functioning individuals. Members of the intervention group were significantly less likely than those in the control group to be receiving SSI 1 year after DMIE enrollment (1.8% vs. 3.2%), but no significant difference in annual earnings was found between the groups (Whalen, Gimm, Ireys, Gilman, & Croake, 2012).

Studies of individual-level clinical interventions for workers with depression show limited evidence of improving employment outcomes. Nieuwenhuijsen et al. (2008) conducted a systematic review of 11 RCTs to improve occupational health in workers with depression. The only intervention found to have positive effects on work absence due to sickness was psychodynamic therapy in combination with tricyclic antidepressant medication when compared to medication alone.

We identified two RCTs of telephonic programs to improve mental health and work outcomes in employees with depression (see Table 5). The first RCT enrolled 604 workers with clinical depression at several large companies served by a managed care organization in a telephonic outreach and care management program that encouraged them to enter outpatient therapy or use antidepressant medication. Participants reluctant to enter treatment were offered structured telephone cognitive–behavioral psychotherapy. Combining data across 6- and 12-month assessments, participants had significantly lower depression severity, significantly higher job retention, and significantly more hours worked than usual care subjects (Wang et al., 2007). In the second RCT, 86 Maine state government employees who screened positive for major depression and at-work limitations were enrolled in a brief telephonic program to improve work functioning. Treatment was offered during 1-hour visits every 2 weeks and consisted of work coaching and modification, care coordination with primary care physicians or other prescribing professionals, and cognitive–behavioral therapy strategies. Intervention participant scores on health problems, work absence measures, and a depression severity measure were all significantly improved, and the magnitude of the improvement on all outcomes was significantly greater than the control subjects (Lerner et al., 2012).

Two studies arrived at differing conclusions about the effect of depression treatment on health and occupational outcomes. In one study (Rost, Smith, & Dickinson, 2004), participants who screened positive for major depression received high-quality depression care from their primary care physicians. The intervention group reported greater work productivity and less absenteeism. However, the treatment did not significantly impact depression severity or emotional role functioning. Conversely, the second study (Adler et al., 2006) found that employees undergoing treatment for depression had worse job performance scores than healthy employees even after demonstrating clinical improvements in symptom severity. We also identified two retrospective observational studies that investigated the relationship between guideline-recommended antidepressant use and short-term disability absences. Both studies found that adherence to antidepressant treatment criteria was significantly associated with reduced frequency and length of disability absences, although neither study provided information about effects on job loss (Burton et al., 2007; Dewa, Hoch, Lin, Paterson, & Goering, 2003).

Evidence that interventions directed at the entire employee pool are effective for workers with mental illness is limited. Employer-level interventions often take the form of untargeted interventions, in which organizational changes are directed at the entire employee pool. These interventions typically focus on providing a supportive work environment, engaging in stress-reduction activities, and offering employees the opportunity to fully engage in the workplace (Lauber & Bowen, 2010). In a Finnish RCT (Vuori, Toppinen-Tanner, & Mutanen, 2012) that focused on company-wide training programs in which individuals volunteered to participate, the intervention group received a 1-week group training workshop on enhancing career-management skills. The control group received a literature package on basic career management information. At the 7-month follow-up, the intervention group displayed significantly decreased depressive symptoms and intentions to retire compared with the control group.

Evidence for Individuals Who Are or Are Expected to Be Long-Term Clients of Mental Health Services and Are Likely to Apply or Are in the Process of Applying for Disability Cash Benefits

We also reviewed the literature on services for people who are now or who are expected to be long-term clients of mental health services who may be at risk of long-term unemployment and disability (see Table 6). We considered research on specific subpopulations who may not currently receive SSA disability benefits but may do so in the future, including people who are homeless, military veterans, TANF recipients, and exoffenders with mental illness. We also considered research on new SSA disability beneficiaries for whom employment interventions might be particularly effective in preventing long-term disability.

Vocational and other support services provided along with health insurance may improve short-term employment outcomes for new SSDI beneficiaries with mental illness; providing health insurance alone had no impact. The Accelerated Benefits (AB) demonstration project, funded by SSA, tested the effects of providing Medicare to new SSDI beneficiaries without having to wait the required 24 months before becoming eligible. Demonstration participants were randomly assigned into an AB group who received health insurance ($N = 400$); an AB Plus group who received health insurance plus case management, employment and benefits counseling services, and other services ($N = 611$); or a control group ($N = 983$). The AB Plus group participated in employment or vocational rehabilitation services at a significantly greater rate ($p = .005$) at 1 and 2 years after random assignment than either the AB group or the control group. Providing health insurance alone (AB group) had no impact but, relative to the control group, the AB Plus program led to nearly a 50% increase in employment and an $831 increase in annual earnings in the second calendar year following enrollment. Among AB Plus members who had any earnings (16%), average annual earnings were $10,187 during this period, about $2,300 more than the control

group (a meaningful, but not statistically significant difference). The significant effects observed for the full AB Plus group were smaller and no longer statistically significant in Year 3, either due to SSA work disincentives, the end of program services, or worsening of beneficiaries' health conditions (Michalopoulos et al., 2011; Weathers & Bailey, 2014). Findings for the 22% of the study sample with mental illness mirrored these patterns.

Limited evidence suggests that providing SE along with housing supports may improve employment outcomes for people with mental illness who are homeless. We identified three promising approaches that assist people with mental illness who are homeless to find employment. The most rigorously evaluated of these, Los Angeles' HOPE, provided SE, supportive housing, and direct payment for such items as vocational classes, work clothing, and equipment to people with mental illness who were formerly homeless. Los Angeles County designated three of its 18 programs for supportive services and housing assistance as Los Angeles HOPE sites. The overall employment rate for Los Angeles's HOPE clients was more than double that of the comparison group who received housing services at other sites (57% vs. 22%), as was the competitive employment rate (27% vs. 13%; Burt, 2012). The other two approaches have not been rigorously evaluated but suggest similar results (Gao, Waynor, & O'Donnell, 2009; Marrone, Foley, & Selleck, 2005).

Limited evidence suggests that SE may be effective for veterans with mental illness. A systematic review suggests limited knowledge of how to reintegrate veterans with mental illness into a new workplace after an absence of more than a year (Van Til et al., 2013). The review concluded that although SE has the strongest evidence base for facilitating workplace reintegration for individuals with mental illness, the literature dealing with reintegration, especially for veterans, is sparse. Of the 97 studies of programs for people with mental illness reviewed, 10 were studies of veterans.

The most promising study included in the review was a RTC focused on veterans with posttraumatic stress disorder (PTSD; Davis et al., 2012). Eighty-five veterans with PTSD were randomly assigned to receive either SE or the standard vocational rehabilitation program provided through the U.S. Department of Veterans Affairs (VA), which provided work therapy through set-aside temporary jobs. Veterans in the SE group were significantly more likely to gain competitive employment, be competitively employed more quickly, work in a competitive job more weeks, and earn higher wages.

A study of the IPS model of SE for homeless veterans with psychiatric or addiction disorders, not covered in the systematic review, showed similar results (Rosenheck & Mares, 2007). The intervention tested a low-intensity teleconference training approach to implementing SE at nine VA programs. Veterans who received IPS engaged in significantly more days of competitive employment, higher levels of competitive employment, and earned higher wages than the control group over the 2-year follow-up period.

A recent analysis of VA administrative data also supports SE's effectiveness as an intervention for veterans with PTSD, substance use disorder, depression, or traumatic brain injury sequelae. Twamley et al. (2013) analyzed two national VA databases of veterans with mental health conditions from Operation Iraqi Freedom and Operation Enduring Freedom. They found that whereas only 2.2% of the veterans in the sample received SE, 51% of those who did found competitive employment as compared to 21% of veterans in the sample who did not receive SE but received some other form of vocational services, such as transitional work experience, incentive therapy, or general vocational services. The comparative effect on number of days worked and days of enrollment in vocational services was similarly large and significant ($p < .001$).

We found no studies examining the effectiveness of employment interventions for exoffenders and TANF recipients. Individuals with mental illness are overrepresented in the criminal justice system (Schnittker, Massoglia, & Uggen, 2012), and having a criminal record presents additional challenges for finding employment upon release from jail or prison. Without supports to aid in overcoming these challenges, exoffenders with mental illness may seek SSI or SSDI as a source of income support and a route to health insurance. Promising efforts are demonstrating the effectiveness of cooperation between the criminal justice and mental health systems to provide services to individuals with mental illness upon their release (Osher, D'Amora, Plotkin, Jarrett, & Eggleston, 2012). Consistent with the findings of Anthony (2006) and Osher and Steadman (2007), however, we were not able to identify any published studies regarding the effectiveness of employment supports for this population. Our search also retrieved no articles meeting our criteria regarding effective interventions for TANF recipients with mental illnesses.

Discussion

Policymakers are increasingly interested in services aimed at preventing long-term unemployment and disability for people experiencing a first episode of psychosis; workers at risk of job loss; and those who are, or are at risk of becoming, long-term users of mental health services who are newly or not yet enrolled in SSA disability programs. We identified interventions that support employment for individuals in these groups. Although one of the most studied interventions, SE (particularly the standardized IPS model), appears to be effective in helping individuals who vary in characteristics such as age, gender, diagnosis or education level achieve higher rates of competitive employment than those in control groups who have the same characteristics, Kinoshita et al. (2013) point out that study sizes are relatively small and data may be skewed due to high attrition rates. Furthermore, evidence on SE has mixed success at improving job retention and earnings. Much of the research on SE has focused on adults with mental illness who are already eligible for disability benefits. For these individuals, SE typically has not raised earnings enough to facilitate exit from disability rolls, even among those who have achieved employment. More evidence is needed on the effectiveness of SE for individuals who have not joined the disability rolls.

Some early intervention programs for people in the early stages of psychosis provide services that include an SE component. The goal is to help prevent full-blown mental illness and long-term involvement with the mental health and disability systems. Evidence for the efficacy of these programs in improving employment and work disability outcomes is limited but positive, and work in this field continues to be an important priority for researchers and policymakers. More research is needed, particularly to demonstrate medium- and long-term outcomes. Similarly, the occupa-

tional outcomes of interventions for workers with mental illnesses at risk of job loss are not well established. Few high quality studies have evaluated interventions that help workers who acquire a mental illness remain at work. Effective interventions for individuals with depression and other mental health conditions who are still working are critical because they may reduce the need for entrance onto the disability rolls.

Several strategies have been used to improve employment outcomes for individuals who are now or who are expected to be long-term clients of traditional mental health services and may be likely to apply for disability benefits in the future. Although identifying this group before they become attached to disability benefits is difficult, the population is of interest to policymakers because after they begin receiving benefits, the likelihood of their returning to work is minimal. SSA's AB demonstration showed that providing vocational and other support services along with health insurance may lead to improved short-term employment outcomes for new SSDI beneficiaries with mental health impairments. In addition, a growing body of evidence suggests that SE may improve employment outcomes for veterans with mental illness. More research is needed to establish a strong evidence base for the effectiveness of these services, as well as for services to other distinct target groups, such as exoffenders and TANF recipients. Although the cost of providing employment supports may exceed the average earnings gained (Michalopoulos et al., 2011), the benefits of preventing long-term disability may accumulate to substantially exceed program costs. This is the promise of preventive interventions, although more research is needed to test this hypothesis.

States can develop comprehensive approaches for funding employment programs by creatively combining federal sources, such as Medicaid and SAMHSA's Community Mental Health Services Block Grant. For example, although in fiscal years 2014 through 2015, SAMHSA required that states set aside five percent of their block grant allocation for early intervention (CMS, 2015), block grant funding can be used to support elements of such programs not covered by insurance even without the set-aside. State Medicaid programs can reimburse employment services and supports and early intervention through a variety of optional benefit categories authorized under Section 1905(a), including targeted case management, preventive, rehabilitative, and other licensed practitioner services, as well as through the mandatory early and periodic screening, diagnosis, and treatment program (CMS, 2015; O'Day et al., 2014). SE and other employment supports are not themselves mandatory or optional Medicaid services, but states may cover most of their components under 1915(c) and 1915(i) Home and Community Based Services (HCBS) authority (CMS, 2011; Siegwarth & Blyler, 2014).

The ACA can also serve as a means to expand current payment options for SE and other employment supports. This important law contains several provisions that may improve the health and employment potential of individuals with mental illness and lessen the degree to which lack of health care coverage may incentivize people to seek public health and disability benefits. These provisions include the Medicaid expansion and the introduction of the state-based health insurance exchanges, the establishment of mental health and substance use disorder services as "essential health benefits," coverage up to age 26 on a parent's plan, and the establishment of health homes for individuals with chronic illness. Because these provisions have the potential to expand access to coverage, the ACA is a significant step toward breaking the link between SSA disability enrollment and availability of affordable health insurance. Further, the ACA may support workers, new SSDI beneficiaries, and others with mental illness who may be at risk of long-term disability by expanding availability of vocational and other support services along with health insurance, leading to improved short-term employment outcomes and, perhaps, less dependence on disability benefits in the future.

Despite these improvements, funding availability for early intervention and SE for people with mental illness is imperfect. States have cobbled together funding from various Medicaid provisions, their own state vocational rehabilitation agencies, the SSA Ticket to Work program and Plans for Achieving Self Support, American Job Centers funded by the U.S. Department of Labor, and grants from federal agencies and other sources. Yet, the most common funding sources have stringent eligibility requirements and many people find accessing early intervention, SE, and other employment services difficult or impossible. Medicaid-funded SE services, for example, typically require individuals to have chronic serious mental illness plus meet their state's financial eligibility rules, which excludes those who have experienced a first episode (Karakus, Frey, Goldman, Fields, & Drake, 2011).

In conclusion, our literature review found that the IPS model of SE provides the strongest evidence for helping people with serious mental illness find work. Yet, the employment and earnings outcomes of SE participants may still fall short of individual and policy goals. More research is needed on long-term effects on employment and receipt of disability benefits, as well as on models for preventing unemployment and disability among those with newly emerging mental illnesses, workers, and those with or at risk for long-term mental illness who are at risk of applying for disability benefits. Employment consistently declines as early as three years before SSDI receipt (Honeycutt et al., 2014). Interventions targeting individuals during this downward employment path are worthy of further study. Medicaid expansion and other provisions of the ACA provide new avenues for supporting the employment goals of Americans with mental illnesses and, thereby, may assist in reducing dependence on disability benefits, which too often results in a lifetime of poverty.

Limitations

This review has several limitations. First, we did not evaluate each study's methodology, particularly when relying on studies reported in other systematic literature reviews. Neither did we use an instrument (such as the Cochrane AMSTAR tool) to determine the quality of systematic reviews used in this study. We included studies even if possible threats to internal validity existed, including high attrition or lack of attrition data, and in some cases, lack of a comparison group or data demonstrating group equivalence. We prioritized RCTs and quasi-experimental designs to mitigate these threats, and did not include studies with very small sizes ($N < 40$). Similarly, we did not assess threats to external validity. Several of the studies we reviewed were conducted abroad, where the health systems, insurance systems, and institutionalization of early intervention or other practices may differ from those in the U.S., potentially producing results that are less generalizable to the U.S. Nor did we consider the representativeness of U.S.-based

samples. In addition, we combined evidence across studies to formulate overall conclusions about efficacy, despite differences in group characteristics and a lack of consistency in outcome measures, intervention durations, and assessment periods. Reporting guidelines to standardize these approaches would greatly improve future research and society's ability to draw conclusions about efficacy.

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