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The Relationship of Multiple Program Benefits and Employment to SSI/DI Enrollment and Reliance Among Working-Age Adults with Serious Mental Illness

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ABSTRACT

Project Number

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Title

The relationship of multiple program benefits and employment to SSI/DI enrollment and reliance among working-age adults with serious mental illness

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Key Findings and Policy Implications

The purpose of this study is to generate information about how SSA's programs for people with psychiatric disabilities intersect and interact with other federal, state and local programs that provide cash and other benefits to people with disabilities, and how enrollment in these programs is affected by changes in employment. We used data from the Employment Intervention Demonstration Program, a federally-funded longitudinal study of supported employment programs for people with serious mental illness (SMI) conducted in 8 states representing the Northeast, Mid-Atlantic, Southeast and Southwestern United States. Detailed employment and benefit information was collected on 1,636 working-age adults over 24 months of follow-up. We present a complex descriptive analysis quantifying sources of income among people with SMI, their relative reliance on public and private income sources, and benefit status changes over time relative to employment. Key limitations of the study include the self-report nature of benefit status, non-population representative nature of the cohort sample, and consequent reliance on descriptive rather than inferential statistics.

We found that:

Multiple program participation was common among working-age adults with SMI. Multiple program participation was more common in means-tested social welfare programs such as SSI and State welfare than in social insurance programs such as DI. Receipt of State welfare benefits declined over the 24 months of study follow-up, while receipt of SSI, Medicaid, DI, and Medicare benefits increased. States varied considerably in the proportion of working-age adults with SMI who were receiving SSI or State welfare benefits, even adjusting for individual characteristics and not explained by local area unemployment rates. Employment was related to diminished use of SSI cash benefits, but not to DI cash benefit use. In particular, at the end of the 24 months, those receiving evidence-based supported employment services and those who were engaged in competitive employment were significantly less likely than their counterparts to

report SSI income, and had significantly lower reliance on SSI income and other benefits compared to earned income. When questioned about their beliefs regarding working while receiving SSI/DI, the most frequent concern was about the risk of losing all benefits after returning to work, followed by concerns about difficulty resuming benefits if they were to be needed in the future. There also was concern that costs associated with obtaining healthcare and job training would be prohibitive without SSI/DI beneficiary status.

The policy implications of the findings are:

We found a high level of poverty among study participants such that even those who were working continued to need income assistance to rise above the federal poverty level. Yet we also found that participation in the SSI program declined significantly over time for study participants who were employed. This suggests that expanding access to evidence-based supported employment services could decrease reliance on SSI cash benefits in the long term. We also found that employed individuals had significantly lower multiple program participation than their unemployed counterparts. This suggests that employment reduces dependence not only on SSI/DI but also on other federal, state and local social welfare programs, and provides a common ground for inter-agency cooperation to promote labor force participation. An additional finding was that study participants' beliefs about working while also receiving disability benefits suggest that they want to work, as long as they do not jeopardize their financial security and access to basic necessities. This suggests that attention be paid to educating low-wage earners about available on-going healthcare benefits and reinstatement services in order to encourage the kind of risk-taking necessary for career advancement and decreased reliance on public programs. Finally, we found significant state-by-state variation in SSI participation even controlling for individual and local area differences. This suggests that policy changes at the federal level may not be experienced uniformly by individuals at the local level. Taking this into account during the policy planning process seems advisable if the goal is widespread improvement in the health, welfare, and financial security of program participants.

The relationship of multiple program benefits and employment to SSI/DI enrollment and reliance among working-age adults with serious mental illness

I. INTRODUCTION

Many adults with serious mental illness (SMI) are eligible for federal disability benefit programs, primarily the Social Security Administration (SSA) Disability Insurance program (DI) and Supplemental Security Income program (SSI). Other government programs that assist people with disabilities fall under the administration and supervision of the federal Department of Veterans Affairs, the Department of Labor, the Department of Education, and the Department of Health and Human Services, as well as state and county agencies. Eligibility criteria differ considerably between programs. Social welfare programs such as SSI and Temporary Assistance to Needy Families (TANF) use varying means-tests for low-income or poverty, while social insurance programs require event-based eligibility such as occurrence of disability (DI). As a result, there is disparate eligibility and support for adults with SMI across multiple programs (Berkowitz, 1987), which can be challenging for individuals and policy-makers alike (Wamhoff & Wiseman, 2005). Research indicates that multiple program participation is likely among recipients of federally funded programs (Doyle and Long, 1988; Houtenville and Brucker, 2014; Tan, 2000) but, to our knowledge, no research has focused on multiple federal and state program participation among adults with SMI.

Analysis of the characteristics of multiple program participation using the Survey of Income and Program Participation (SIPP) found that among working-age adults, multiple program receipt is most common in means-tested social welfare programs such as SSI, while individual or dual receipt is more common in event-conditioned social insurance programs, such as DI (Reese, 2010). This analysis also showed that, in general, multiple program participation was consistent

with the purpose and requirements of the different programs, for example, recipients of the State welfare program Temporary Aid to Needy Families (TANF) were typically women of childbearing age. Large percentages of multiple program receipt are associated with concurring programs, such as TANF with Medicaid and DI with Medicare.

Research on SSI recipients indicates that many also receive benefits from other government programs (Daly & Burkhauser, 2003). In 1999, 90% of male and 91% of female working-age SSI recipients (age 18-64) also had Medicaid coverage; 32% of males and 29% of females had DI; 32% of males and 28% of females had Medicare; 0% of males and 12% of females had TANF; 39% of males and 52% of females had food stamps; and 7% of males and 12% of females had housing assistance. Unlike SSI and Medicaid, which tend to have long-term enrollment, participation in other social welfare programs tends to be cyclical (e.g., food stamps) or short-lived (e.g., TANF) (Cancian et al, 2005).

Daly & Burkhauser (2003) also report on research showing that the percentage of SSI recipients also receiving DI and Medicare had been declining while SSI enrollees' receipt of food stamps and public housing had been rising. Although this rise may be responsive to economic need, engagement in multiple means-tested programs can result in more complex work disincentives due to programs' differing eligibility requirements and the risk of multiple reduced benefits (Keane & Moffitt 1998). At the same time, as a result of the 1996 Personal Responsibility and Work Opportunity Reconciliation Act, there are financial incentives for both States and TANF beneficiaries with disabilities to transfer from the TANF to the SSI program (Stapleton et al., 2001; Wamhoff & Wiseman, 2005).

Other research has shown that rates of participation in DI and SSI among working-age adults with self-reported disabilities varies considerably by state (Ben-Shalom & Stapleton,

2014). This research also finds that variation in Medicaid participation is even greater than variation in SSI participation, reflecting differences in non-SSI based Medicaid eligibility between states (ibid.).

By definition, low or nonexistent income is a major characteristic of participants in means-tested programs. Research has shown that membership in means-tested programs, such as food stamps and SSI, can make the difference between living above or below poverty level for low-wage earners (Browne, 2015). However, those that receive the greatest benefit also tend to be the most disadvantaged in terms of income, employment, and education (Edelstein et al., 2014).

For the past two decades, people with psychiatric disabilities have represented a significant proportion of SSI and DI beneficiaries, approximately 34% and 26% respectively (Cook, 2006; SSI Annual Statistical Report 2015; SSDI Annual Statistical Report 2015), and they rarely attain economic self-sufficiency once they are enrolled (O'Leary, Livermore & Stapleton, 2011). The short-term and long-term impacts of supported employment on earned income and resulting reduced reliance on disability programs have been demonstrated (Cook et al., 2005; Cook, Burke-Miller & Roessel, 2016; Drake et al., 2013). However, the overall savings accrued to SSA program funds as a result of increased employment among supported employment recipients is limited, and the total social cost-benefit is unclear when other program costs are additionally considered (Cook, Burke-Miller & Roessel, 2016; Salkever, 2013). Moreover, since people with SMI are more likely than the general population to be living at or close to poverty levels of income (Hanandita & Tampubolon, 2014; Vick et al., 2012), achieving self-sufficiency and financial well-being is a considerable challenge for them (Burke-Miller et al., 2010).

The purpose of this study is to generate information about how SSA's programs for people with psychiatric disabilities intersect and interact with other federal, state and local programs that

provide services and benefits to people with disabilities, and how this enrollment changes with changes participants' employment status. It also addresses the question of what level of self-sufficiency is achieved by people receiving evidence-based supported employment. We present a complex descriptive analysis quantifying sources of income among people with SMI, their relative reliance on public and private income sources, and benefit status changes over time relative to employment.

In addition, the following specific questions are addressed:

1. What are the sources of income reported by people with SMI, and what proportion is from SSI/DI program benefits?
2. What are the characteristics of beneficiaries whose incomes fall below the federal poverty threshold, and what other programs do they participate in, particularly means-tested programs?
3. How many disability beneficiaries receive state or federal housing, energy, food or other subsidies, and how much do these subsidies contribute to total household resources?
4. What are the amounts and relative importance of other potential sources of income or support to SSI/DI beneficiaries, including VA benefits, workers' compensation, private disability, government pensions, and/or non-cash benefits?
5. How does SSI participation differ across geographic locations reflecting State differences in SSI supplements, programs for SSI recipients, economic indicators, health insurance coverage, or other factors?
6. How do characteristics of SSI/DI beneficiaries and non-beneficiaries differ in terms of demographics (e.g., age, education and marital status), mental and physical health characteristics (e.g., diagnosis and functioning), prior work history, and beliefs about program work disincentives?
7. How does earned income resulting from evidence-based supported employment impact use of public benefits?

II. METHODS

Data for this study are from the Employment Intervention Demonstration Program (EIDP). The EIDP was a 5-year study of supported employment programs for people with SMI conducted in eight states (Arizona, Connecticut, Maine, Maryland, Massachusetts, Pennsylvania, South Carolina and Texas), and funded by the Center for Mental Health Services of the Substance Abuse and Mental Health Services Administration (Cook, Carey, Razzano, Burke, & Blyler, 2002). By means of a Cooperative Agreement funding mechanism, researchers, federal personnel, policy makers, and disability advocates developed and implemented a Common Protocol and Documentation (Employment Intervention Demonstration Program, 2001), uniform data collection methods, and a hypothesis-driven analysis plan.

Study participants (n=1,648) were recruited from existing public mental health clinical populations via case manager referral, self-referral, word-of-mouth, and newspaper advertisements. Participants met the following inclusion criteria: 18 years or older at the time of study enrollment; willing and able to provide informed consent; interest in working; and an Axis I DSM-IV diagnosis of mental illness accompanied by moderate to severe functional impairment. Subjects were recruited in waves, with data collection beginning February 1996 and ending May 2000, and all were monetarily compensated, with amounts varying from $10 to $20 per interview.

All EIDP study sites administered the same semiannual interview assessments measuring demographic and human capital characteristics and weekly vocational assessments of employment status and job features. Once voluntarily enrolled in the study, lack of participation in EIDP services or research interviews were not criteria for exclusion from the study sample. At each site, study participants were randomly assigned to: 1) an experimental condition in which

they received evidence-based supported employment services, defined as integrated clinical and vocational services delivered by employment specialists who were part of multidisciplinary teams that met frequently to coordinate employment and other services, with the goal of placement into competitive jobs that were tailored to patients' career preferences, using a job search process beginning soon after program entry, and providing ongoing vocational supports throughout the entire study period, or 2) a comparison condition in which participants received unenhanced vocational services or vocational services as usual. Individuals assigned to the experimental condition received evidence-based supported employment services throughout the study's 24-month observation period.

At baseline and each follow-up interview, participants were asked a series of questions about sources of income and receipt of non-cash benefits in the prior month. Sources of income and resources that were recorded at each interview include: formal and informal earned income, federal disability benefits (DI, SSI), federal Veterans Administration or other armed services disability benefits and pensions; state or county welfare programs[1] (general assistance, food stamps, Temporary Aid to Needy Families (TANF); State disability services (Vocational Rehabilitation); State unemployment compensation; private income from investment, savings, alimony, child support, or family support; public or private health insurance (medical, psychiatric, dental or prescription); and housing subsidies. In a substudy funded by SSA (Cook et al., 2016), a subgroup (n=867) provided more detailed information regarding amount and type of subsidies.

[1] There was variation across states regarding whether means-tested programs were administered at the state or local (i.e., county) levels. Hereafter, we refer to local means-tested programs as "State welfare programs" given that county governments fall ultimately under the jurisdiction of each state.

Participant characteristics, including age, gender, race, education, marital status, parental status, work history, and functioning, were collected via in-person interviews at study baseline and biannually for 2 years. Mental health DSM-IV and comorbid physical conditions were assessed at baseline by clinicians and trained research staff using a combination of structured clinical interview and chart review. For these analyses, we excluded 12 individuals aged 65 or over who would likely have transferred from Social Security disability to retirement benefits. Thus, the final sample size used in the analysis was 1,636.

Full-time employment was defined as >=35 hours/week. Competitive employment was defined as a non-temporary job available on the open labor market, paying at least minimum wage, not set aside for a person with a disability, and with a direct employer-employee relationship (Cook et al., 2005). Evidence-based supported employment was defined as vocational services emphasizing rapid placement into competitive employment in a field of the worker's own choosing followed by ongoing support with no time limits (Cook et al., 2005a). Supported employment was the result of randomization to study condition, and participants were not necessarily engaged in services once assigned. Local/state unemployment rate for the geographic area surrounding each study site was calculated from Bureau of Labor Statistics Current Population Survey reports as has been described in Cook et al. (2006b).

Descriptive statistics were used to characterize sources of income, distribution and combinations of benefits, and prevalence of means-tested benefits by State. Unadjusted correlations were used to examine relationships among different types of benefits and employment. Chi-square and F-tests were used to compare participant characteristics in relationship to federal disability program use and federal poverty level. We used multivariable logistic regression analyses to characterize predictors of means-tested benefits. Finally, random

effects logistic regression models were used to examine changes in benefit receipt over time, measured in 6 month intervals between baseline and 24 months. Employment and competitive employment were coded as any versus none during the 6 months prior to report of benefits, while receipt of evidence-based supported employment (study condition) was a constant over time.

Translation of dollars to 2017 equivalent dollars is based on a consumer price index inflation calculation of the difference in buying power between the study midpoint of July 1998 and July 2017 being 150% (Bureau of Labor Statistics, 2017). While earnings may not have kept pace with inflation, this approach is recognized as an adequate estimate of relative worth of inflation-adjusted dollars (Appelbaum, 2004).

III. RESULTS

A. Sources of Income among Working-Age Adults with Serious Mental Illness

Sources of income among working-age (18-64 years) EIDP participants at study baseline are described in Tables 1a (unemployed participants) and 1b (employed participants). Among unemployed participants (n=1,405), almost all reported some form of cash income in the past month (93.5%), although the mean and median amounts were low ($570 and $520 respectively). In 2017 terms, these would be the equivalent of $855 and $780 respectively.

Table 1a shows the percent and number of unemployed participants reporting each source of income in the prior month. Among those reporting a source, the mean, standard deviation, median, minimum, maximum dollar amounts are shown, as well as the average proportion of total income that source represents, if received. The most frequently reported source of income was federal SSI or DI cash benefits, reported by 72.5% of unemployed participants. Specifically, 25.6% reported DI without SSI, 34.6% reported SSI without DI, and 12.3% reported both DI and SSI income. Among non-dual beneficiaries, average income from DI was higher than SSI ($624 vs $463). Among unemployed participants reporting DI income, DI represented an average of 90% of their total monthly income; for unemployed SSI recipients, SSI represented 85% of their total monthly income.

Very few participants reported SSA retirement income (1.8%), Veterans disability income (0.6%), or Veterans pension (0.4%). For those receiving SSA retirement income or veterans disability income, these sources provided a large proportion of their monthly income (68% and 73% respectively), while veterans pensions provided almost half of those individuals' income (44%).

Table 1a. Sources of income[1] among unemployed working-age adults (18-64 years) with serious mental illness (N=1,405) at study baseline

Non-employment source of income in the past month	% (n)	Mean (SD) $	Median $	Minimum $	Maximum $	Mean % of total income, if received
All sources	93.5% (1,314)	570 (317)	520	5	4,472	100%
Federal						
SSDI or SSI	72.5% (1019)	530 (200)	490	9	4,462	87%
SSDI without SSI	25.6% (360)	624 (275)	598	9	4,462	90%
SSI without SSDI	34.6% (486)	463 (108)	470	32	1,410	85%
SSDI and SSI	12.3% (173)	524 (122)	503	94	1,360	87%
SSA retirement	1.8% (25)	420 (218)	435	66	786	68%
Veterans disability	0.6% (9)	485 (544)	260	91	1,833	73%
Veterans pension	0.4% (6)	355 (208)	412	95	617	44%
State						
State Welfare (TANF, general welfare, public aid or food stamps)	43.7% (614)	174 (218)	115	6	1,798	36%
Vocational Rehabilitation	1.4% (20)	118 (94)	100	10	380	21%
Unemployment compensation	0.7% (10)	526 (220)	574	168	896	95%
Private						
Retirement, investment or savings income (if receiving regular payments)	2.4% (34)	434 (314)	416	2	1,200	60%
Alimony or child support	2.2% (31)	314 (265)	210	40	1,058	39%
Family	16.1% (226)	134 (229)	50	4	1,800	37%
Illegal/unreported income	9.5% (133)	108 (142)	50	2	800	21%
Non-family gifts/loans	5.4% (76)	103 (123)	50	2	600	36%

Source: Employment Intervention Demonstration Program: 1996-2000

[1] Income is shown in 1996 through 1998 dollars depending on the year respondents' entered the study.

Just under half of unemployed participants reported State welfare income (TANF, general welfare, public aid or food stamps) (43.7%). Average and median income from State welfare programs were considerably lower than federal cash assistance, at $174 and $115 per month. For those receiving it, State welfare represented an average of 36% of total monthly income. Receipt of income from State welfare programs was associated with being female and having minor age children, but not exclusively (not shown): just over half of those reporting State welfare were female (54%), compared to 41% of those not reporting State welfare benefits (chi-square =

21.57, p<.001), and a quarter of those reporting State welfare benefits had minor children (26%) compared to 19% of those not reporting State welfare benefits (chi-square=9.87, p=.002).

Almost none of the participants reported receiving income from State vocational programs (1.4%) or unemployment compensation (<1%). For those receiving unemployment compensation, it represented almost all of their monthly income (95%).

Among private sources of income, family support, unreported income, and gifts or loans from non-family acquaintances were most commonly reported, by 16.1%, 9.5%, and 5.4% of participants, respectively. Although the amounts of income from these sources were relatively low, they represented from 21% to 37% of those individuals' total income. Notably, for unemployed individuals receiving financial assistance from relatives, this source accounted for more than one-third (37%) of their total monthly income.

Table 1b shows sources of income for participants who were employed at baseline (n=231) and reported earned income. Total monthly income from all sources was higher for employed participants than unemployed participants ($738 vs $570) and included an average of $319 in earned income, representing 43% of income from all sources. In 2017 dollars, earnings of $319/month translate into about $478/month. More than half of employed participants also received SSI or DI (58.4%). Employed and unemployed SSI/DI beneficiaries received similar amounts of cash income from these programs, but federal benefit income represented a lower proportion of total income for those who were employed compared to those who were unemployed (66%-68% vs >85%).

Compared to unemployed participants, a lower proportion of employed participants reported State welfare benefits (34.6% of employed vs 43.7% of unemployed) and receipt of State welfare benefits was not significantly associated with gender or parental status (not shown). State welfare

income was similar for both employed and unemployed groups (an average of $163 and $174/month) and represented 27% and 36% of total income respectively.

Table 1b. Sources of income[1] among employed working-age adults (18-64 years) with serious mental illness (N=231) at study baseline

Sources of income in the past month	% (n)	Mean (SD) $	Median $	Minimum $	Maximum $	Mean % of total income
All sources	100% (231)	738 (440)	679	10	3,500	100%
Earned income	100% (231)	319 (331)	200	7	2,300	43%
Federal						
SSDI or SSI	58.4% (135)	512 (170)	511	40	1,200	66%
SSDI without SSI	20.7% (46)	630 (186)	595	251	1,200	66%
SSI without SSDI	32.9% (73)	433 (120)	470	40	804	65%
SSDI and SSI	7.2% (16)	318 (283)	411	40	1,200	68%
SSA retirement	0.9% (2)	118 (117)	118	35	200	17%
Veterans disability	0%	n/a	n/a	n/a	n/a	n/a
Veterans pension	0%	n/a	n/a	n/a	n/a	n/a
State						
State welfare (AFDC/TANF, general welfare, public aid or food stamps)	34.6% (80)	163 (183)	115	10	912	27%
Vocational Rehabilitation	1.3% (3)	59 (79)	16	10	150	4%
Unemployment compensation	1.3% (3)	314 (217)	205	174	564	50%
Private						
Retirement, investment or savings income (if receiving regular payments)	1.7% (4)	733 (554)	801	1	1,330	48%
Alimony or child support	1.7% (4)	80 (42)	65	50	140	18%
Family	14.7% (34)	160 (281)	50	5	1,500	27%
Illegal/unreported income	0.9% (2)	93 (113)	50	1	400	13%
Non-family gifts/loans	2.6% (6)	57 (44)	45	15	140	10%

Source: Employment Intervention Demonstration Program: 1996-2000

[1] Income is shown in 1996 through 1998 dollars depending on the year respondents' entered the study.

For employed participants, the only other noteworthy source of income was from family, with 14.7% of employed participants reporting an average/median of $160/$50 in family assistance, similar to the 16.1% of unemployed participants reporting an average/median of $134/$50 from family.

About one fifth of all employed and unemployed EIDP participants (21.5%) reported that they received a housing subsidy of any type (e.g., Federal Section 8, State or other). In the

subsample providing more detailed income information (n=867), the average housing subsidy was $285 per month. In the total group of EIDP participants, only 3% reported a subsidy for utilities (e.g., gas, electricity). Among the subsample, the average utility subsidy was reported to be $70 per month.

B. Distributions and Combinations of Benefits

Table 2 shows the distribution of the most prevalent benefit types among working-age adults with SMI by federal disability beneficiary status for unemployed (top) and employed (bottom) EIDP participants. Among the employed, 44% reported State welfare benefits. DI recipients had the lowest prevalence of State welfare benefits (27%), compared to all others including those with SSI only (51%), with SSI and DI (54%), and with neither DI nor SSI (45%). The overall prevalence of State welfare benefits was lower among employed participants (34%), and both DI only and SSI only participants reported relatively low use of State welfare benefits among employed participants (29% and 25%). Among unemployed working-age individuals, housing subsidies were more common among dual SSI+DI beneficiaries compared to single SSI/DI benefit or non-beneficiaries (31% vs <=22% in the other categories). Among those who were employed, housing subsidies were mostly commonly reported by DI only and SSI+DI beneficiaries (31% and 29%) compared to SSI only recipients or non-beneficiaries (21% and 23%). DI was associated with Medicare and SSI with Medicaid as would be expected. A small number of non-DI beneficiaries reported Medicare coverage (<=16%). This apparent inconsistency may be due to recall error or to the possibility that some respondents had ongoing Medicare coverage even though their cash benefits were suspended or terminated due to work or other causes. In addition, 24%-41% of non-SSI recipients reported Medicaid coverage, suggesting that they had additional access to Medicaid via State programs.

Table 2. Distributions of benefits among unemployed and employed working-age adults (18-64 years) with serious mental illness

	Total un-employed n=1,405	Neither SSDI nor SSI n=388	SSDI only N=358	SSI only N=486	SSDI and SSI n=173	Chi-square,	p-value
State Welfare	44%	45%	27%	51%	54%	57.09	<.001
Housing Subsidy	21%	19%	17%	22%	31%	14.58	.002
Medicaid	61%	30%	41%	89%	85%	394.54	<.001
Medicare	34%	8%	72%	16%	65%	461.44	<.001
	Total employed n=231	**Neither SSDI nor SSI n=96**	**SSDI only N=46**	**SSI only N=73**	**SSDI and SSI n=16**	**Chi-square,**	**p-value**
State Welfare	34%	39%	29%	25%	65%	11.31	.010
Housing Subsidy	25%	23%	31%	21%	29%	1.91	.592
Medicaid	47%	31%	24%	79%	56%	46.35	<.001
Medicare	30%	6%	76%	15%	80%	94.62	<.001

Source: Employment Intervention Demonstration Program: 1996-2000

We examined correlations among different types of benefits as well as employment status using (Table 3). Having earned income was significantly ($p<.05$) and negatively correlated with receiving DI income (r= -.144), State welfare income (r= -.134) and having Medicaid (r= -.181). DI was strongly and positively correlated with Medicare as would be expected (r= .816), and negatively with SSI (r= -.360), Medicaid (r= -.131), and State welfare (r= -.161). Similarly, Medicare was negatively associated with SSI (r= -.166), Medicaid (r= -.246), and State welfare (r= -.132). SSI was strongly and positively correlated with Medicaid (r= .762), and positively correlated with State welfare receipt (r=.205). State welfare also was positively correlated with Medicaid (r=.329). The only significant relationship with receipt of housing subsidies was a positive association with State welfare receipt (r=.227).

Table 3. Relationships between employment and types of program participation: zero-order tetrachoric correlations for dichotomous variables

	Employed	SSDI	Medicare	SSI	Medicaid	State Welfare	Housing
Employed	1						
SSDI	-.144*	1					
Medicare	-.055	.816***	1				
SSI	-.090	-.360***	-.166***	1			
Medicaid	-.181***	-.131**	-.246***	.762***	1		
State Welfare	-.134**	-.161***	-.132**	.205***	.329***	1	
Housing	.082	.036	.071	.091	.075	.227***	1

Source: Employment Intervention Demonstration Program: 1996-2000
2-sided p-value: *<.05, **<.01, ***<.001

We further examined specific combinations of means-tested benefits by employment status, as shown in Table 4a. A quarter (26%) of unemployed participants had none of the four means-tested benefits that we examined: SSI, Medicaid, State welfare, and housing subsidy. Almost half (46%) had 1 or 2 of these benefits and the remaining 28% had 3 or all 4. In contrast, almost a third (32%) of employed participants had none of the 4 benefits, 52% had 1 or 2, and only 16% had 3 or all 4. Employed participants had an average of 1.3 means-tested benefits (sd=1.1, median=1) which was significantly lower than the average for unemployed participants which was 1.6 benefits (sd=1.2, median=2) benefits ($F=13.05$, $p<.001$) (not shown).

Among both unemployed and employed participants, a prevalent combination of benefits was SSI + Medicaid without other benefits (15% of unemployed and 14% of employed, $p=.730$). Another typical combination among unemployed participants was participation in SSI + Medicaid + State Welfare programs (15%). This was significantly less common among employed participants, at only 7% ($p=.002$). Receipt of only housing subsidies was significantly more common among employed participants than unemployed (6% vs 3%, $p=.003$), as was the combination of housing subsidies + SSI (3% vs <1%, $p=.001$). A significantly higher proportion of unemployed participants reported all 4 means-tested benefits (SSI + Medicaid + State Welfare

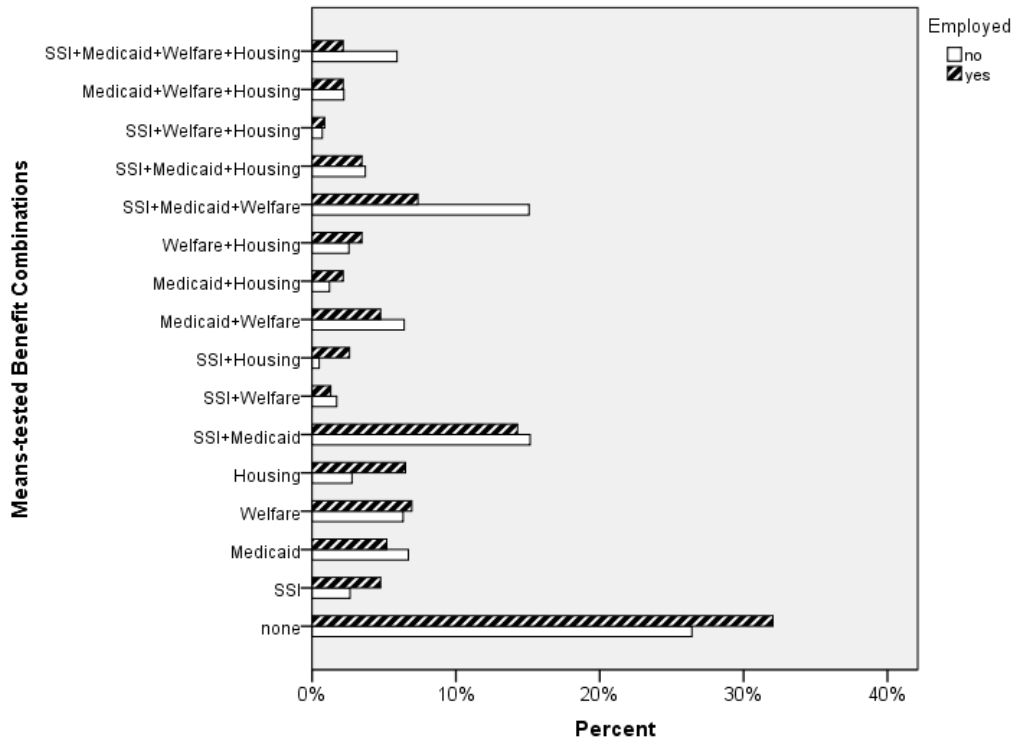
Table 4a. Combinations of means-tested program participation among working-age adults (18-64) with serious mental illness by employment status

	Unemployed n=1,405					Employed n=231					Unemployed vs Employed	
	Number of means-tested benefits					Number of means-tested benefits						
	0	1	2	3	4	0	1	2	3	4		
	26%	18%	28%	22%	6%	32%	23%	29%	14%	2%	χ^2	p-value
SSI only		3%					5%				3.16	.076
Medicaid only		7%					5%				0.73	.392
State Welfare only		6%					7%				0.12	.734
Housing only		3%					6%				8.59	.003
SSI + Medicaid			15%					14%			0.12	.730
SSI+State Welfare			2%					1%			0.21	.651
SSI+Housing			<1%					3%			11.09	.001
Medicaid+State Welfare			6%					5%			0.93	.336
Medicaid+Housing			1%					2%			1.36	.243
State Welfare+Housing			3%					3%			0.62	.433
SSI+Medicaid+State Welfare				15%					7%		9.85	.002
SSI+Medicaid+Housing				4%					3%		0.03	.859
SSI+State Welfare+Housing				<1%					<1%		0.07	.799
Medicaid+State Welfare+Housing				2%					2%		0.01	.968
SSI+Medicaid+State Welfare+Housing					6%					2%	5.46	.019

Source: Employment Intervention Demonstration Program: 1996-2000

+ Housing) (6%) than did employed participants (2%) (p=.019). Figure 1 presents a graphic representation of different kinds of benefit combinations among employed and unemployed participants.

Figure 1a. Combinations of means-based program participation among working-age adults (18-64 years) with serious mental illness by employment status



Source: Employment Intervention Demonstration Program: 1996-2000

We next examined specific combinations of means-tested benefits by poverty status, as shown in Table 4b. We used the Federal Poverty Level (FPL) thresholds for households in the 48 contiguous states corresponding to the calendar year of the respondents' reports (https://aspe.hhs.gov/prior-hhs-poverty-guidelines-and-federal-register-references). Among all

Table 4b. Combinations of means-tested program participation among working-age adults (18-64) with serious mental illness by federal poverty level[1] status

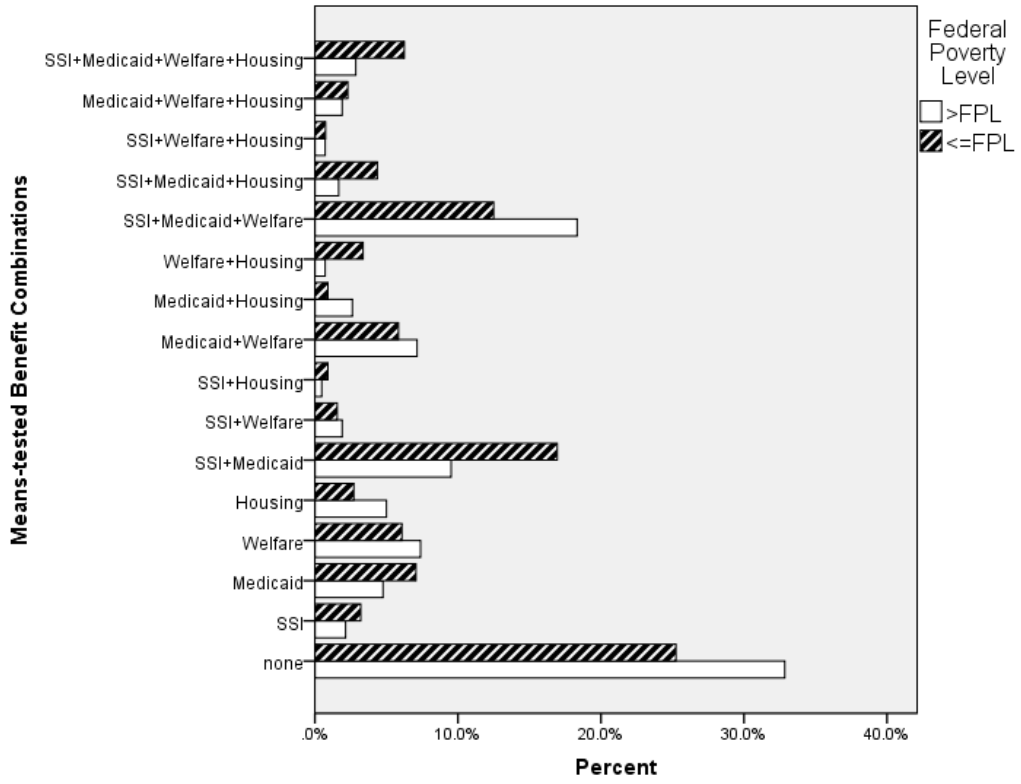
	Income < Federal Poverty Level n=1,216 (74%)					Income > Federal Poverty Level n=420 (26%)					<FPL vs >FPL	
	Number of means-tested benefits					Number of means-tested benefits						
	0	1	2	3	4	0	1	2	3	4		
Total N=1,636	**25%**	**19%**	**30%**	**20%**	**6%**	**33%**	**19%**	**22%**	**23%**	**3%**	**χ^2**	**p-value**
SSI only		3%					2%				1.24	.265
Medicaid only		7%					5%				2.75	.097
State Welfare only		6%					7%				0.87	.350
Housing only		3%					5%				5.11	.024
SSI + Medicaid			17%					10%			13.44	<.001
SSI+State Welfare			2%					2%			0.23	.635
SSI+Housing			1%					1%			0.73	.394
Medicaid+State Welfare			6%					7%			0.92	.338
Medicaid+Housing			1%					3%			6.92	.009
State Welfare+Housing			3%					1%			8.42	.004
SSI+Medicaid+State Welfare				13%					18%		8.82	.003
SSI+Medicaid+Housing				4%					2%		6.40	.011
SSI+State Welfare+Housing				1%					1%		0.01	.957
Medicaid+State Welfare+Housing				2%					2%		0.23	.632
SSI+Medicaid+State Welfare+Housing					6%					3%	7.06	.008

Source: Employment Intervention Demonstration program: 1996-2000

[1] Federal Poverty Level (FPL) thresholds correspond to the calendar year of respondents' reports

EIDP participants, 74% had monthly household incomes below this threshold, an additional 21% had incomes <= 200% of FPL, and the remaining 5% had incomes over 200% of FPL. As shown in Table 4b, a quarter (25%) of participants whose incomes fell below the poverty threshold (<FPL) had none of the four means-tested benefits that we examined. About half (49%) had 1 or 2 of these benefits, and the remaining 26% had 3 or all 4. In comparison, a higher proportion (33%) of participants with incomes over FPL had none of the 4 benefits, 45% had 1 or 2, and 26% had 3 or all 4. There was a significant difference in average number of social welfare benefits received between those with incomes below the poverty threshold and those with higher incomes (mean 1.6 vs 1.4, p=.005) (not shown).

Figure 1b. Combinations of means-based program participation among working-age adults (18-64 years) with SMI by poverty status: below federal household poverty level (FPL)[1] vs above FPL



Source: Employment Intervention Demonstration program: 1996-2000

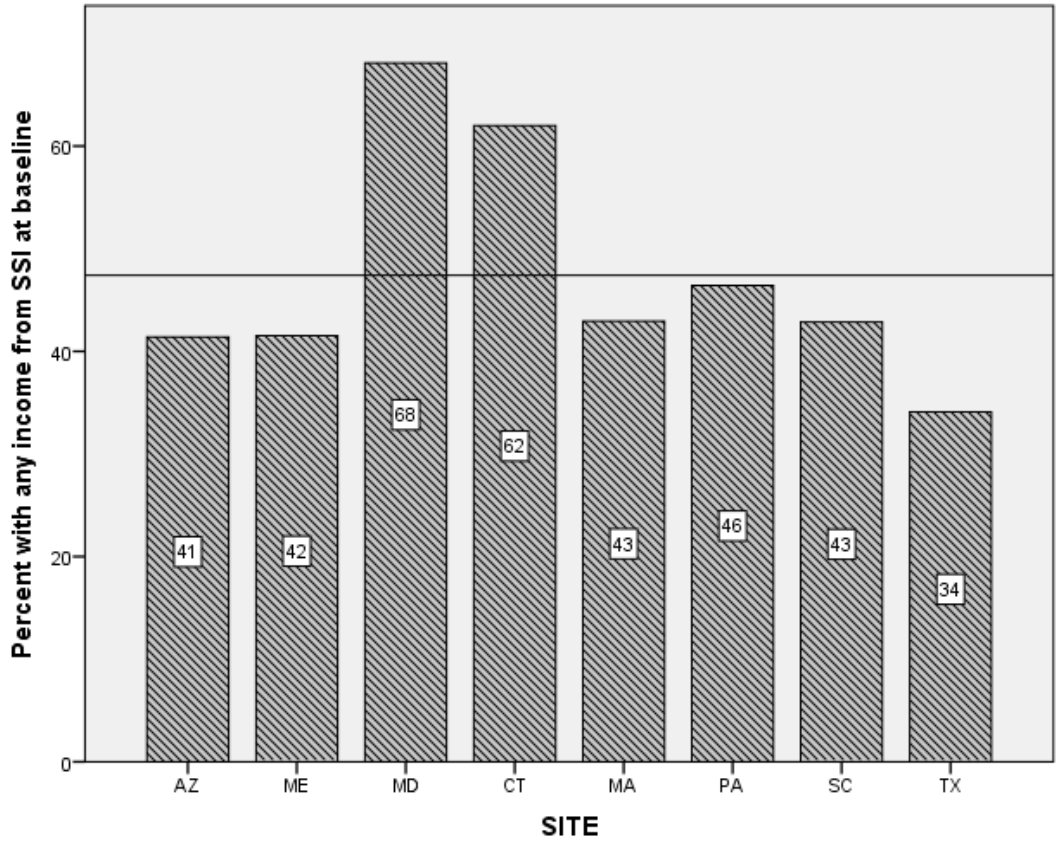
[1] Federal Poverty Level (FPL) thresholds correspond to the calendar year of respondents' reports

In the 19% of both groups with only one means-tested benefit, compared to those with income over FPL, there was a trend for more of those with incomes below the federal poverty threshold to have Medicaid alone (7% of poverty versus 5% of higher income, p=.097), while fewer had housing subsidies alone (3% of poverty versus 5% of higher income, p=.024). The most common combination of benefits for those with income below FPL was SSI + Medicaid and this combination was seen significantly more often among those below the poverty threshold than among those with higher incomes (17% of <FPL versus 10% of >FPL, p<.001). Another common combination of benefits was SSI + Medicaid + State Welfare, but this combination was more common in the higher income group (13% of <=FPL versus 18% of >FPL, p=.003). A higher proportion of those below FPL had all 4 means-tested benefits than those above FPL (6% versus 3%, p=.008). Figure 1b presents a graphic representation of different kinds of benefit combinations among participants by poverty level.

C. State Variation in prevalence of SSI and Welfare Benefits

Figure 2 shows the proportion of unemployed working-age adults reporting SSI cash assistance at study baseline by state (N=1,405). Prevalence ranged from 34% in Texas to 68% in Maryland, with the overall mean of 47% shown in the reference line. In multivariable logistic regression analysis (not shown) adjusting for participant gender, age, race/ethnicity, education, marital status, diagnosis, and physical comorbidity, participants living in Maryland were significantly more likely to report SSI (OR=1.87 95%CI [1.36, 2.58], p=.001) while those in Texas were significantly less likely to report SSI (OR=0.61 95% CI [0.46, 0.80], p=.002) (using Arizona as the reference for difference contrasts among the states).

Figure 2. The proportion of unemployed working-age adults with serious mental illness reporting SSI cash assistance at study baseline by state

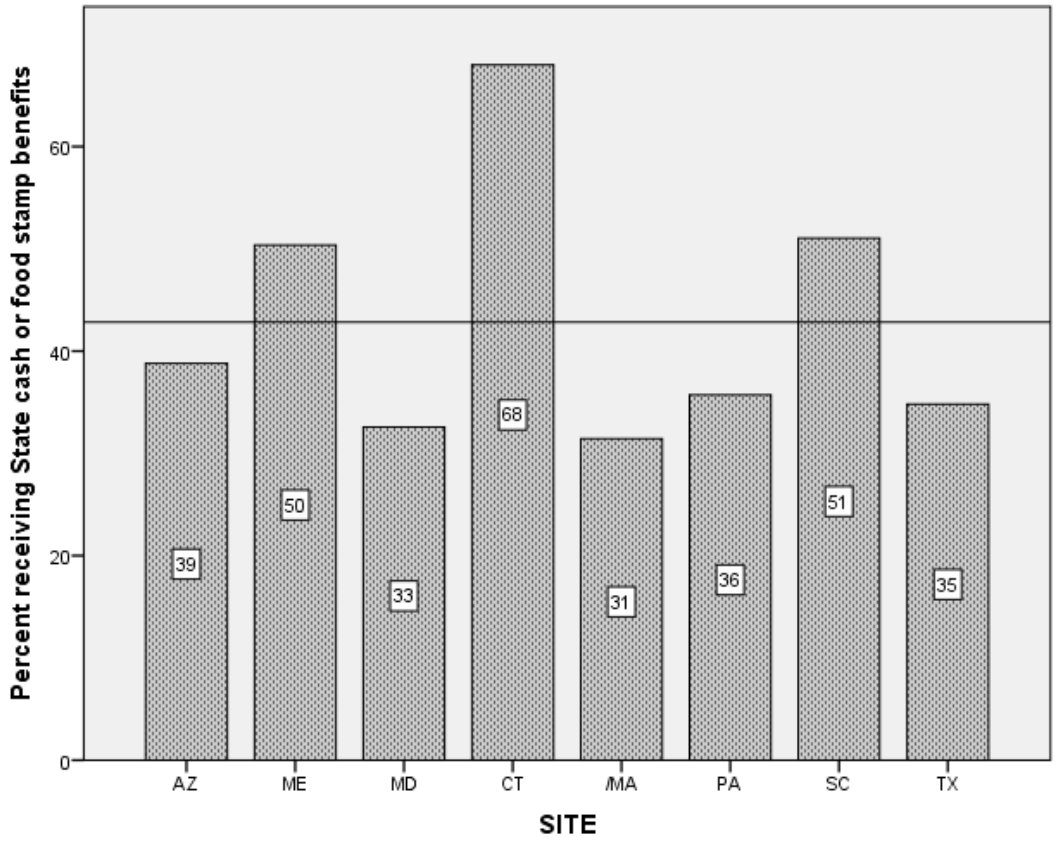


Source: Employment Intervention Demonstration Program: 1996-2000, N=1,405.
Note: The overall mean of 47% is shown in the reference line.

Figure 3 shows the proportion of unemployed working-age adults reporting welfare cash assistance or food stampls at study baseline by state (N=1,405). The overall mean of 43% is shown in the reference line. In multivariable logistic regression analysis (not shown) adjusting for participant gender, age, race/ethnicity, education, marital status, diagnosis, and physical comorbidity, participants living in Maine and Connecticut were significantly more likely to report State welfare benefits (OR=1.65 95%CI [1.14, 2.41] , p=.009) and (OR=2.85 95%CI [2.10, 3.87] , p<.001), while those in Maryland and Massachusetts were significantly less likely

to report State welfare receipt (OR=0.49 95% CI [0.35, 0.69], p=.011) and (OR=0.65 95% CI [0.46, 0.93], p=.017) (using Arizona as the reference for difference contrasts among the states).

Figure 3. The proportion of unemployed working-age adults serious mental illness reporting state welfare cash assistance or food stamps at study baseline by state



Source: Employment Intervention Demonstration Program: 1996-2000, N=1,405.
Note: The overall mean of 43% is shown in the reference line.

As previously reported by Cook and colleagues (2006b) local unemployment rates were generally low, ranging from a low of 2.4% in Maine to a high of 5.4% in South Carolina. There was a small but significant positive correlation between poverty status and participation in the SSI program (r=.12, p<.001), but not between poverty and State welfare receipt (r=.01, p=.755).

D. Characteristics of SSI/DI beneficiaries by poverty status

We used the poverty level thresholds described earlier to examine the characteristics of SSI, DI and dual beneficiaries. Among all beneficiaries, most (70.9%) had monthly incomes below the FPL threshold, and almost all (95.4%) were at or below 200% of FPL. We thus compared characteristics of SSI/DI beneficiaries that were associated with income below poverty level (n=821) versus those with greater, although still low, income (n=337) (Table 5).

Table 5. Characteristics of working-age SSI/DI beneficiaries with SMI by Federal Poverty Level[1] status

	All SSI/SSDI beneficiaries N=1,158	Household Income <FPL N=821 (70.9%)	Household Income > FPL N=337 (29.1%)	Test	p-value
	Mean (SD)	Mean (SD)	Mean (SD)	F	
Age, years	39 (9)	38 (9)	40 (9)	6.09	.014
	% (n)	% (n)	% (n)	χ^2	
Male	56.3% (652)	55.4% (455)	58.5% (197)	0.90	.344
White/non-minority	47.9% (555)	45.6% (374)	53.7% (181)	6.37	.012
High School or GED	64.8% (749)	60.7% (498)	74.7% (251)	20.39	<.001
Married/living as married	8.9% (103)	7.6% (62)	12.25 (41)	6.75	.034
Co-resident minor child(ren)	15.2% (176)	16.8% (138)	11.4% (38)	5.75	.056
Schizophrenia spectrum	57.3% (664)	59.9% (492)	51.0% (172)	7.72	.005
Substance Use	35.3% (409)	35.9% (295)	33.8% (114)	0.46	.496
Poor functioning	52.2% (602)	54.5% (446)	46.45 (156)	6.25	.012
Comorbid condition	40.0% (463)	41.9% (344)	35.3% (119)	4.32	.038
Worked in prior 5 years	62.4% (683)	59.5% (456)	69.0% (227)	8.79	.003
Currently employed	12.2% (141)	9.1% (75)	19.6% (66)	24.40	<.001
SSDI without SSI	35.1% (406)	28.1% (231)	51.9% (175)	59.40	<.001
SSI without SSDI	48.5% (562)	55.4% (455)	31.8% (107)	53.59	<.001
SSDI and SSI	16.4% (190)	16.4% (135)	16.3% (55)	0.01	.959
State welfare	41.5% (479)	39.6% (324)	46.0% (155)	4.01	.045
Housing subsidy	22.2% (254)	23.2% (188)	19.6% (66)	1.84	.175
Medicare	43.7% (483)	39.2% (306)	54.5% (177)	21.63	<.001
Medicaid	69.8% (783)	74.2% (588)	59.3% (195)	27.70	<.001

Source: Employment Intervention Demonstration program: 1996-2000

[1] Federal Poverty Level (FPL) thresholds correspond to the calendar year of the respondents' reports

Compared to those with more income, those in poverty were significantly younger (mean age 38 years vs 40 years. p=.014); significantly more likely to have a schizophrenia spectrum diagnosis (60% vs 51%, p=.005), significantly more likely to report poor functioning (55% vs

46%, p=.012), and tended to be more likely to have co-resident minor children (17% vs 11%, p=.056). Compared to those with more income, those in poverty were significantly less likely to be White/non-minority (46% vs 54%, p=.012), significantly less likely to be high school graduates (61% vs 75%, p<.001), significantly less likely to be married or cohabitating (8% vs 12%, p=.034), significantly less likely to have worked in the 5 years prior to study baseline (60% vs 69%, p=.003) and significantly less likely to be employed (9% vs 20%, p<.001).

In terms of benefits, compared to those with incomes above poverty level, those with poverty level income were significantly more likely to be receiving SSI without DI (55% of those with poverty level income had SSI alone vs 32% of those with higher incomes (p<.001). Conversely, a significantly higher proportion of the higher income group than those below the poverty threshold had DI alone (52% vs 28%, p<.001). Dual SSI+DI beneficiaries were equally likely to have incomes above versus below the poverty threshold. Forty-one percent (41%) of all working-age SSI/DI beneficiaries reported State welfare income, although this proportion was significantly lower in below poverty threshold group than in the above poverty threshold group (40% vs 46%, p=.045). Medicaid was significantly more prevalent among those with incomes below the poverty thresholds than those with higher incomes (74% versus 59%, p<.001). Medicare was significantly more prevalent among the higher income group than the group with incomes below the poverty threshold (55% vs 39%, p<.001). A slightly higher proportion of those with incomes below the poverty threshold than above reported housing subsidies (23% versus 20%), but this difference was not significant.

E. Characteristics of SSI/DI beneficiaries compared to non-beneficiaries, and characteristics of beneficiaries by program status

Working-age adults with SMI who were SSI and/or DI beneficiaries differed significantly from non-beneficiaries on many demographic and clinical characteristics (Table 6a). SSI/DI

beneficiaries were significantly older on average than non-beneficiaries (39 years vs 37 years, p<.001), significantly more often male than non-beneficiaries (56% vs 45%, p<.001), were significantly more likely to have a diagnosis of schizophrenia than non-beneficiaries (57% vs 27%, p<.001), and significantly more likely to have a comorbid health condition than non-beneficiaries (40% vs 32%, p=.003). Also compared to non-beneficiaries, SSI/DI beneficiaries were significantly less likely to be married or living as married (8% vs 14%, p<.001), significantly less likely to have co-resident minor children (18% vs 28%, p<.001), significantly less likely to rate themselves as having poor or fair functioning (52% vs 58%, p=.026), significantly less likely to have worked in the prior 5 years (62% vs 80%, p<.001), and significantly less likely to be employed (12% vs 19%, p<.001). There was a marginally significant difference in education with a lower proportion of SSI/DI beneficiaries than non-beneficiaries having at least a high school or equivalent education (65% vs 70%, p=.051).

Table 6a. Characteristics of working-age adult SSI/DI beneficiaries and non-beneficiaries with serious mental illness

	All working-age adults N=1,636 Mean (SD)	SSI and/or SSDI N=1,158	Neither SSI nor SSDI N=478	Test F	p-value
Age, years	38 (9)	39 (9)	37 (9)	13.44	<.001
	% (n)	% (n)	% (n)	χ^2	
Male	52.9% (866)	56.3% (652)	44.8% (214)	18.07	<.001
White/non-minority	48.7% (796)	47.9% (555)	50.4% (241)	0.84	.359
High School or GED	66.3% (1,082)	64.8% (749)	69.8% (333)	3.81	.051
Married/living as married	10.0% (163)	8.2% (95)	14.2% (68)	13.68	<.001
Co-resident minor child(ren)	20.9% (331)	17.9% (200)	28.4% (131)	21.70	<.001
Schizophrenia spectrum	49.4% (792)	57.3% (664)	26.8% (128)	126.54	<.001
Substance Use	33.9% (555)	35.3% (409)	30.5% (146)	3.44	.064
Fair or Poor functioning	53.9% (878)	52.2% (602)	58.2% (276)	4.97	.026
Comorbid condition	37.7% (617)	40.0% (463)	32.2% (154)	8.69	.003
Worked in prior 5 years	67.4% (1,034)	62.4% (683)	79.8% (351)	43.22	<.001
Currently employed	14.1% (231)	12.2% (141)	18.8% (90)	12.35	<.001

Source: Employment Intervention Demonstration Program: 1996-2000

Working-age adults with SMI who were federal disability beneficiaries differed significantly between specific programs in terms of individual characteristics (Table 6b). Compared to SSI alone or SSI and DI dual beneficiaries, DI only participants tended to be significantly older (mean age 41 years vs 38 or 37, p<.001). There was no significant difference between programs in terms of male vs female gender, with just over half of all participants being male (56%). A significantly higher proportion of DI only beneficiaries were white rather than minority race (62% vs 37% of SSI and 48% of dual beneficiaries, p<.001). A significantly higher proportion of DI only beneficiaries had a high school education (77% vs 54% SSI or 70% dual beneficiaries, p<.001), and were married or living as married (10% vs 8% or 4%, p=.022). Compared to DI only, significantly higher proportions of SSI only or SSI/DI dual beneficiaries had schizophrenia spectrum diagnoses (63% vs 48%, p<.001). Finally, compared to SSI or DI and SSI/DI dual beneficiaries, a significantly lower proportion of SSI only beneficiaries had worked in the past 5 years (58% vs 65% of DI and 68% of dual beneficiaries, p=.026). Among the minority of

participants who were employed at study baseline (12%), there was not a significant difference in employment status associated with program status.

Table 6b. Characteristics of working-age adult SSI/DI beneficiaries with serious mental illness by SSI/DI program status

	All working-age SSI/DI beneficiaries N=1,158 Mean (SD)	SSDI only N=406	SSI only N=562	SSI+SSDI N=190 Mean (SD)	Test	p-value
Age, years	38.7 (8.9)	40.9 (8.5)	37.8 (9.1)	36.7 (7.8)	22.24	<.001
	% (n)	% (n)	% (n)	% (n)	$\chi 2$	
Male	56.3% (652)	56.4% (229)	54.4% (306)	61.6% (117)	2.94	.230
White/non-minority	47.9% (555)	62.3% (253)	37.4% (210)	48.4% (92)	58.81	<.001
High School or GED	64.8% (749)	77.1% (313)	54.3% (304)	69.5% (132)	55.86	<.001
Married/living as married	8.2% (95)	10.3% (42)	8.2% (46)	3.7% (7)	7.63	.022
Co-resident minor child(ren)	17.9% (200)	16.8% (65)	19.8% (109)	14.4% (26)	3.27	.195
Schizophrenia spectrum	57.3% (664)	47.5% (193)	62.5% (351)	63.2% (12)	24.59	<.001
Substance Use	35.3% (409)	33.3% (135)	37.2% (209)	34.2% (65)	1.72	.423
Fair or Poor functioning	52.2% (602)	54.5% (220)	51.2% (287)	50.3% (95)	1.35	.509
Comorbid condition	40.0% (463)	39.2% (159)	41.3% (232)	37.9% (72)	0.85	.653
Worked in prior 5 years	62.4% (683)	65.3% (248)	58.4% (312)	68.0% (123)	7.30	.026
Currently employed	12.2% (141)	11.8% (48)	13.5% (76)	8.9% (17)	2.85	.240

Source: Employment Intervention Demonstration Program: 1996-2000

SSI/DI beneficiaries were asked about their beliefs regarding how their cash and other benefits might be affected by working. Table 7 presents the responses of SSI only, DI only, and dual beneficiaries regarding attitudes indicating potential disincentives to work. Beneficiaries' beliefs generally did not differ by program status, and concern over immediate loss of benefits was not common. Only one-fifth of all beneficiaries agreed with the statements: "As soon as people start working they stop getting their benefit check(s)" (21%); and "As soon as people start working they lose their medical (Medicare/Medicaid) coverage" (21%) with no significant difference by program. On the other hand, the majority of beneficiaries in both programs agreed that, "If I knew that I wouldn't lose all of my benefits, I would try to get a job or get a better

job." (68%), suggesting that concern about eventual loss of all benefits might be acting as a work disincentive.

Table 7. Attitudes about working while receiving SSA disability benefits by beneficiary status among adults with serious mental illness

Disincentive Belief	All working-age SSI/DI beneficiaries N=1,158	SSDI only N=406	SSI only N=562	SSI+SSDI N=190	χ^2	p-value
	% Agree	% Agree	% Agree	% Agree		
1. As soon as people start working they stop getting their benefit check(s).	21%	20%	23%	20%	1.34	.504
3. As soon as people start working they lose their medical (Medicare/Medicaid) coverage.	21%	18%	23%	19%	3.55	.170
4. Unless a job offers coverage of mental health and prescriptions, I can't afford to take it.	44%	42%	46%	4 2%	1.65	.439
5. If I go to work, get off of benefits and get sick right away, I'll have a hard time getting back on benefits. (SSI or dual) 5. If I go back to work and get sick right away, I will have lost my benefits and will have a hard time getting back on benefits. (SSDI)	43%	35%	50%	40%	21.03	<.001
6. I can't afford to get training to help me get a better job.	42%	42%	43%	37%	2.42	.299
7. If I knew that I wouldn't lose all of my benefits, I would try to get a job or get a better job.	68%	67%	71%	62%	5.09	.079

Source: Employment Intervention Demonstration Program: 1996-2000

The prohibitive costs of healthcare and job training were endorsed as a concern by almost half of beneficiaries in both programs. Just under half of all beneficiaries agreed that, "Unless a job offers coverage of mental health and prescriptions, I can't afford to take it." (44%) and that "I can't afford to get training to help me get a better job." (42%).

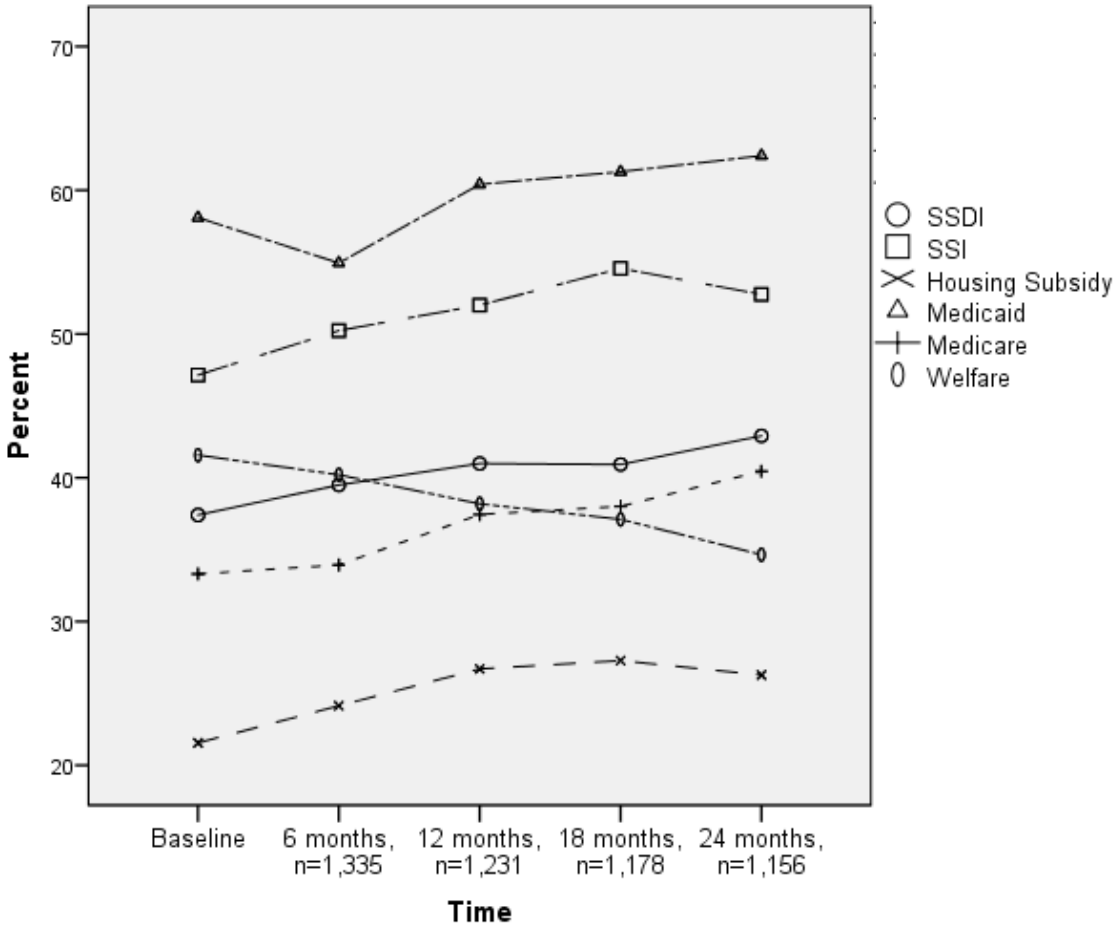
Finally, there were concerns about resuming SSI/DI beneficiary status if needed in the future. Among DI beneficiaries, 35% agreed with the statement, "If I go back to work and get sick right away, I will have lost my benefits and will have a hard time getting back on benefits."

Higher proportions of SSI only and dual beneficiaries (50% and 40% respectively) agreed with a similar statement, "If I go to work, get off of benefits and get sick right away, I'll have a hard time getting back on benefits." These differences were significant, with concern about benefit resumption being highest among SSI only beneficiaries, followed by dual beneficiaries, and lowest among DI only beneficiaries ($p<.001$).

F. Changes in benefit receipt over time associated with employment

To explore the nature of changes in benefit receipt over time, we created a series of figures to graphically depict observed variations by program over 24 months. Figure 4 shows the bi-annual proportions of all EIDP participants enrolled in each of the federal and State means-tested and social welfare programs studied. Proportions increased significantly over 24 months for every program, with the exception of State welfare programs, in which enrollment significantly decreased over time.

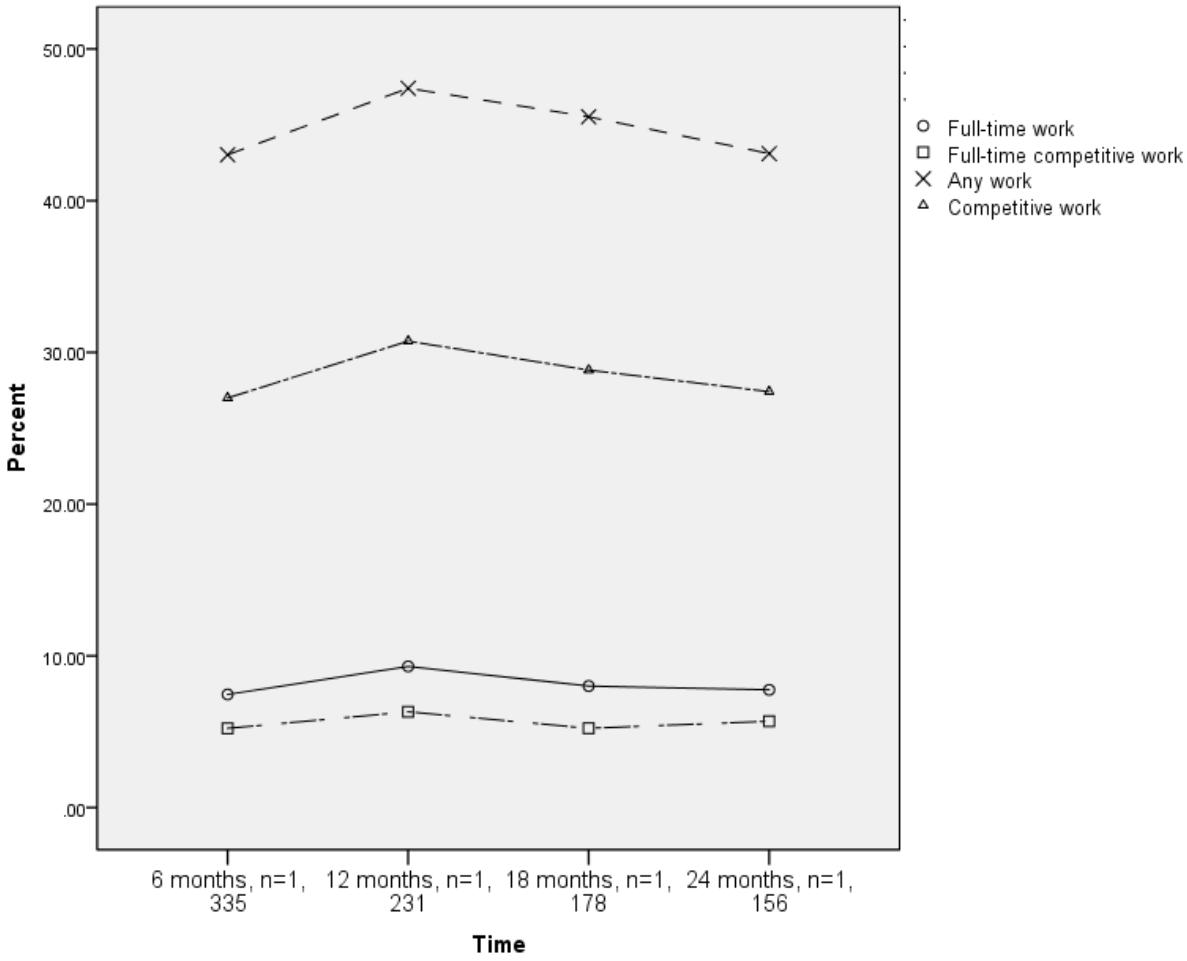
Figure 4. Changes in benefit receipt over time among all working-age adults with serious mental illness



Source: Employment Intervention Demonstration Program: 1996-2000, N=1,636.

Next, we examined proportions employed full- and part-time in any work and in competitive employment. Figure 5 depicts the bi-annual proportions of individuals engaging in any employment and competitive employment, as well as full-time employment and competitive employment. We observed low rates of full-time employment, regardless of competitive work status, generally below 10% of participants. Rates of any work were much higher, with rates of competitive work somewhat lower.

Figure 5. Rates of employment and competitive employment among working-age adults with serious mental illness, any and full-time



Source: Employment Intervention Demonstration Program: 1996-2000, N=1,636.

Finally, we turned to the relationship between federal and State social welfare and social insurance program participation and any employment, competitive employment, and receipt of evidence-based supported employment. Table 8 presents the results of random effects logistic regression models examining changes over time in benefit receipt by employment status over time and study condition. Models included a random intercept and time, as well as participants' state of residence and age to adjust for differences in State policies and economies, and age-related changes in program eligibility.

Table 8. Relationship of employment, competitive employment and supported employment on use of federal and state benefits over time among working-age adults with serious mental illness over 24 months: Random effects logistic regression models including time (6 month intervals), and controlling for participant state of residence and age in years

	SSI	Medicaid	SSDI	Medicare	State Welfare	Housing
	OR [95%CI]	OR [95%CI]	OR [95%CI]	OR [95%CI]	OR [95%CI]	OR [95%CI]
Any employment	0.64 [0.49, 0.83] ***	0.84 [0.68, 1.04]	1.02 [0.78, 1.34]	0.98 [0.79, 1.26]	0.61 [0.49, 0.76] ***	0.90 [0.69, 1.16]
Time	1.13 [1.06, 1.22] ***	1.06 [1.00, 1.12]	1.10 [1.02, 1.18] *	1.16 [1.09, 1.24] ***	0.81 [0.76, 0.86] ***	1.22 [1.13, 1.31] ***
Full-time employment	0.73 [0.44, 1.21]	0.80 [0.53, 1.20]	1.05 [0.60, 1.83]	1.04 [0.64, 1.67]	0.68 [0.44, 1.05] +	0.99 [0.59, 1.67]
Time	1.09 [1.02, 1.17] *	1.05 [0.99, 1.11]	1.10 [1.02, 1.18] **	1.16 [1.09, 1.23] ***	0.78 [0.74, 0.83] ***	1.21 [1.13, 1.30] ***
Competitive Employment	0.50 [0.37, 0.68] ***	0.76 [0.59, 0.97] *	1.18 [0.86, 1.62]	1.06 [0.81, 1.39]	0.59 [0.46, 0.76] ***	0.94 [0.70, 1.26]
Time	1.13 [1.05, 1.21] ***	1.06 [1.00, 1.12]	1.09 [1.01, 1.17] *	1.16 [1.09, 1.23] ***	0.80 [0.75, 0.85] ***	1.22 [1.13, 1.30] ***
Full-time competitive employment	0.58 [0.32, 1.06] +	0.77 [0.47, 1.26]	1.06 [0.56, 2.03]	0.98 [0.55, 1.75]	0.50 [0.29, 0.85] *	0.64 [0.33, 1.26]
Time	1.09 [1.02, 1.17] **	1.05 [0.99, 1.11]	1.10 [1.02, 1.18] **	1.16 [1.09, 1.23] ***	0.78 [0.74, 0.83] ***	1.22 [1.14, 1.30] **
Supported Employment	0.54 [0.31, 0.93] *	0.77 [0.56, 1.06]	1.12 [0.61, 2.03]	0.83 [0.56, 1.23]	1.04 [0.73, 1.48]	1.18 [0.75, 1.85]
Time	1.09 [1.02, 1.16] *	1.04 [0.99, 1.10]	1.10 [1.03, 1.18] **	1.16 [1.09, 1.23] ***	0.77 [0.73, 0.82] ***	1.21 [1.13, 1.30] ***

Source: Employment Intervention Demonstration Program: 1996-2000, N=1,636.
OR=odds ratio; CI=confidence interval
+p<.10, *p<.05, **p<.01, ***p<.001

While participation in the SSI program generally increased significantly over time (with odds-ratios ranging from 1.09-1.13), individuals with any employment were significantly less likely to report SSI cash assistance over time (OR=0.64, p<.001), and this effect was even more

pronounced among individuals engaged in competitive employment (OR=0.50, p<.001). A similar but smaller effect was seen for the groups engaged in full-time employment of any type or full-time competitive employment. Also noteworthy is that, regardless of their employment status, individuals receiving evidence-based supported employment services also were significantly less likely to report SSI cash benefit receipt over time (OR=0.54, p<.05).

Participation in the Medicaid program did not change significantly over time. However, those engaged in paid work that was competitive in nature were significantly less likely to report Medicaid coverage over time (OR=0.76, p<.05) than those not working competitively. On the other hand, Medicaid coverage was not associated with engaging in any paid work, full- or part-time work, or receipt of evidence-based supported employment services.

Participation in the DI program increased significantly over time as indicated by those models' significant odds-ratios ranging from 1.09 to 1.10 (p<.05). There were no significant relationships between DI participation and full or part-time employment, competitive employment or receipt of evidence-based supported employment in the longitudinal models. Participation in the Medicare program also increased significantly over time with all odds-ratios =1.16 (p<.05). As with DI participation, there were no significant relationships between Medicare beneficiary status and employment, competitive employment or receipt of evidence-based supported employment.

Unlike the other programs, participation in State welfare programs decreased significantly over time. In addition, there was an independent negative effect of employment on these programs. Those with any paid employment, competitive employment, and full-time competitive employment were significantly less likely to receive State welfare benefits over time (OR=0.61, p<.001; OR=59, p<.001; OR=0.50, p<.05 respectively). However, receipt of evidence-based

supported employment services was not associated with changes in State welfare program participation (OR=1.04, p>.05).

Finally, while housing subsidy use increased over time, it was not associated with employment, competitive employment or receipt of evidence-based supported employment.

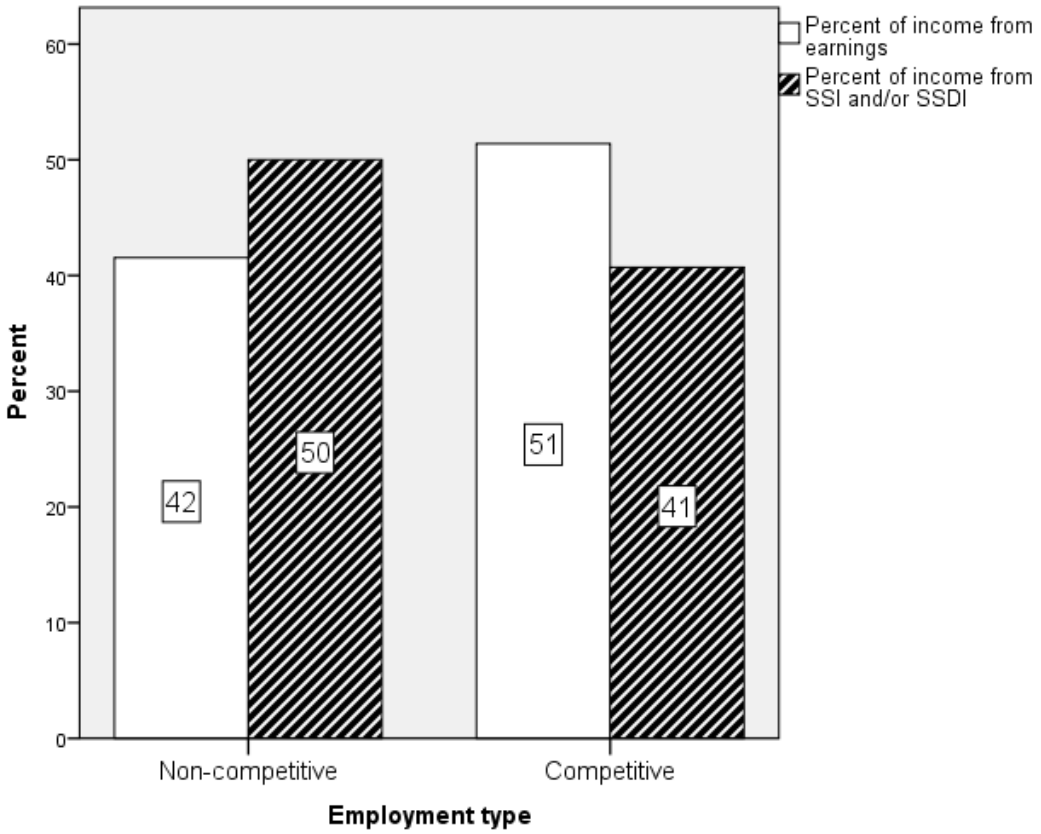
G. Associations between program participation and receipt of evidence-based supported employment services

At the final study follow-up time point, 24 months post study baseline, those in the experimental condition who received evidence-based supported employment were significantly more likely to be employed or to have worked in the past 6 months compared to those in the control condition (49% vs. 37%, p<.001), and more likely to have worked competitively than controls (34% vs. 20%, p<.001) (not shown). There was no significant difference by experimental or control condition in the proportions reporting DI program participation (39% vs 43%, p=.239) or State welfare program participation (30% vs. 35%, p=.125). However, the proportion reporting SSI program participation was significantly lower for recipients of evidence-based supported employment than for controls (46% vs 55%, p=.002). In addition, participants engaged in competitive employment were much less likely to report SSI program participation than those who were unemployed or engaged in non-competitive work (36% vs 56%, p<.001).

Finally, among those employed at 24 months post-baseline, we compared those who were engaged in competitive employment (n=188) to those who were engaged in non-competitive employment (n=111) to examine potential differences in their on-going reliance on SSI/DI cash benefits relative to earned income (Figure 6). For those working competitively, earned income represented just over half 51% of their average monthly income, compared to two-fifths (42%) of the average monthly incomes of those working non-competitively (chi-square=7.15, p=.008).

By comparison, SSI/DI cash benefits comprised about two-fifths (41%) of the average monthly income among those in competitive employment compared to half (50%) of the average monthly income among the non-competitively employed (chi-square = 5.65, p=.018). Those employed competitively earned significantly more, averaging $543/month (sd=$490) compared to non-competitive earnings averaging $351/month (sd=310) (F=13.69, p<.001). To view these results in the current context, those in competitive employment earned an average of $815 per month in 2017 dollars. In 2017, the SGA for those who are disabled but not blind is $1,170 per month, which still exceeds the $815 in estimated 2017 monthly earnings. Thus, while there is support in our findings for the claim that receipt of evidence-based supported employment and attainment of employment are associated with lower participation in some federal and State programs, at the same time, participation in these programs often made the difference between living above versus below the federal poverty threshold for these individuals.

Figure 6. Percent of income from earnings compared to percent from SSI/DI among adults with serious mental illness employed at 24 months post-baseline



Source: Employment Intervention Demonstration Program: 1996-2000

IV. DISCUSSION

In keeping with prior research on non-SMI populations (Doyle and Long, 1988; Tan, 2000), we found that multiple program participation was common in a cohort of working-age adults with SMI who were interested in employment. We also found that, in general, multiple program participation was consistent with the purpose and requirements of the respective programs (Reese, 2010). For example, multiple program receipt was largely associated with specific concurring programs, such as TANF with Medicaid and DI with Medicare. Adults with more recent work history were more likely to report DI assistance than SSI, in keeping with the social insurance nature of the DI program. At the same time, adults with less work history and lower levels of education were more likely to receive SSI assistance than DI assistance, in keeping with the social welfare nature of the SSI program.

Consistent with prior research on people with SMI (Hanandita & Tampubolon, 2014; Vick et al., 2012), virtually all of our study participants were poor. Most had incomes below the federal poverty threshold while only 5% had incomes greater than 200% of the poverty threshold, indicating that this is a population likely to be in need of support from multiple social welfare programs (Edelstein et al., 2014). Other factors associated with poverty level income were poorer work history and lower education levels, suggesting that participants have very low levels of human capital on which to draw. Finally, similar to Reese (2010), in our study, multiple program participation was more common in means-tested social welfare programs such as SSI than in social insurance programs such as DI. In particular, those receiving SSI and Medicaid were also more likely to receive State welfare benefits.

Participation in SSI, DI, Medicaid, and Medicare increased significantly over the study's 24-month follow-up period, while participation in State welfare programs decreased significantly

over time. The latter finding may reflect our study time period's overlap (1996 through 2001) with the years following passage of the 1996 Personal Responsibility and Work Opportunity Act (PRWORA), which resulted in shorter-term State welfare benefits and greater incentive for TANF recipients to apply for SSI benefits (Cancian et al, 2005; Stapleton et al., 2001; Wamhoff & Wiseman, 2005). Prior research has shown that there is a high prevalence of psychiatric disorders among women on TANF (Cook et al., 2009), and the declining availability of this and other State benefits such as food stamps during this period (Moffitt, 2015) may have encouraged those who were eligible to apply for SSI program participation.

Those with any paid employment, especially those working competitively, were significantly less likely to be receiving SSI over time, and also significantly less likely to be receiving State welfare over time, suggesting the role of employment in enhancing financial independence. Those receiving evidence based supported employment were significantly less likely to be on SSI over time, also supporting the role of this evidence-based service in enhancing economic self-sufficiency. However, there were no corresponding effects of employment of any kind (competitive versus non-competitive, full- versus part-time) or of receiving evidence based supported employment on receipt of DI or Medicare over time. Regarding Medicaid, those engaged in competitive employment were significantly less likely to be on Medicaid over time than those not competitively employed. Otherwise, Medicaid coverage did not change significantly over time and was not affected by receipt of evidence based supported employment services. Taken together, these findings present strong but not unanimous support for the influence of employment and weaker but still noteworthy support for the impact of evidence based vocational services in reducing reliance on means-tested social welfare programs.

We also found that states varied considerably in the proportion of working-age adults with SMI who were receiving SSI or State welfare benefits, even adjusting for individual characteristics. This may be due to state-by-state variation in eligibility for different programs as well as differences in eligibility adjudication. Higher local area unemployment rate was related to greater use of SSI in our population, but the correlation was not large enough to completely explain these State variations in program participation.

Beliefs about working while receiving SSA disability benefits did not suggest large scale rejection of this notion, and did not differ notably between SSI and DI beneficiaries. The greatest concern expressed by all beneficiaries was about ultimately losing all benefits after returning to work, followed by concerns about resuming benefits if they were to be needed in the future. There also was concern about the costs associated with obtaining healthcare and job training as being prohibitive without SSI/DI benefits.

Prior analyses of EIDP data indicate that most jobs held by DI beneficiaries were low-wage, part-time, and without benefits such as health insurance, paid vacation or sick leave. During the 2-year study follow-up period, only 4 percent of DI beneficiaries had monthly incomes that would have earned enough for them to complete their trial work period and leave the DI rolls being financially self-sufficient (Cook, Grey, Burke-Miller, et al., 2006a). Even with earned income, adults with SMI continue to need income assistance to exit poverty level income, develop assets, and further reduce reliance on public benefits.

A. Limitations

One limitation to our analysis is the reliance on self-report for information about program participation and the size of cash benefits. However, a prior study using EIDP data found a high correspondence between self-report of SSI/DI beneficiary status and SSA administrative data on beneficiary history (Cook et al., 2016). Second, the EIDP cohort was not a representative sample

of all adults with SMI in the United States or of all working-age SSI and DI beneficiaries with SMI as their primary disability. On the other hand, while not nationally representative, the size and multi-region nature of the EIDP cohort may make it potentially representative of adults with SMI receiving services at publicly funded, community based outpatient programs. Finally, the results we present are descriptive in nature and do not demonstrate causation.

B. Policy Implications of Our Findings

There are numerous policy implications of our study's findings. The first relates to the high level of multiple program participation we documented among individuals with SMI who were working or seeking employment. Even after they entered the labor force, these working-age adults who were clients of their states' public health systems continued to need income assistance to rise above the federal poverty level. This was true regardless of whether they were SSA disability beneficiaries or not, since two-thirds of SSI/DI beneficiaries in our study fell below the federal poverty threshold. It also was true regardless of their employment status, since three-quarters of working individuals in our study were simultaneously participating in federal or state means-tested programs. However, given evidence that participation in the SSI program declined significantly over time for those who were working, expanding access to evidence-based supported employment services appears to have the potential to decrease reliance on SSI cash benefits in the long term.

We also found that being employed significantly reduced the proportion that SSI/DI contributed to participants' total incomes by 21 percentage points from 87% among unemployed beneficiaries to 66% among employed beneficiaries. At the same time, employed individuals had significantly lower multiple program participation than their unemployed counterparts. Employment was associated with reduced participation in SSI, Medicaid, and State welfare programs. This suggests that efforts to promote working can reduce dependence on not only

SSA but also other federal, state and local programs. This provides a common ground for inter-agency cooperation and underlines the need for strategies that involve multiple public agencies in order to address the complex forces that sustain reliance on means-tested and social insurance programs.

Another important implication of our findings is that beliefs about working while receiving SSA disability benefits do not suggest wholesale rejection of labor force participation. Instead, more pressing concerns were about loss of access to crucial benefits in related means-tested programs and worry about difficulty resuming SSI/DI program participation in the event that it is needed in future. This attitude corresponds closely with the nature of SMI as a cyclical condition that often remits and relapses, as well as possible concerns about the stability of the U.S. economy. This suggests that attention be paid to providing a safety net of services and benefits for low-wage earners with SMI to encourage the kind of risk-taking necessary for career advancement, asset accumulation, and decreased reliance on public programs.

Finally, our finding of significant state-by-state variation in SSI participation implies that any policy changes at the federal level may not be experienced uniformly by individuals at the local level. In addition, we also found significant State-by-state variation in State welfare program participation. Since one of the most common forms of multiple program participation is SSI/DI + Medicaid/Medicare + State welfare, this calls attention to the interaction between programs at both local, state and federal levels. Taking this into account during the policy planning process seems advisable if the goal is widespread improvement in the health, welfare, and financial security of program participants.

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