

# Job Endings and Work Trajectories of Persons Receiving Supported Employment and Cognitive Remediation

Carina Teixeira, Ph.D., Kim T. Mueser, Ph.D., E. Sally Rogers, Sc.D., Susan R. McGurk, Ph.D.

**Objective:** This study examined job endings and work trajectories among participants in a study comparing the effects of adding cognitive remediation to supported employment among individuals who had not benefited from supported employment.

**Methods:** Data were from a controlled trial of 107 persons with serious mental illness enrolled in supported employment but who had not obtained or sustained competitive work. Participants were randomly assigned to enhanced supported employment only (with employment specialists trained to recognize cognitive difficulties and teach coping strategies) or to the Thinking Skills for Work program (enhanced supported employment plus cognitive remediation). For the 52 participants who worked, the two groups were compared on types of job endings, reasons for job endings, successful versus unsuccessful jobs, and work trajectories over the two-year study period.

**Results:** The two groups did not differ in types of job ending, although participants in Thinking Skills for Work were less likely than those in enhanced supported employment only to cite dissatisfaction with the job as a reason for the job ending. Participants in Thinking Skills for Work were also less likely to have an overall unsuccessful work trajectory, more likely to have only successful jobs, and more likely to be employed at the end of the study.

**Conclusions:** The Thinking Skills for Work program appeared to help participants who had not benefited from supported employment stick with and master their jobs more effectively than those in enhanced supported employment only, resulting in better work trajectories over the course of the study.

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Employment is an important goal for many people with a serious mental illness, and supported employment is an effective approach to improving work outcomes. However, the job tenure of people who work in supported employment is often relatively brief, frequently three to six months in controlled studies (1–6). Although the intensity of job supports influences job tenure (7), and job tenure reported in clinical trials may underestimate tenure in typical programs (8), many jobs that clients obtain end unsuccessfully, and not everyone obtains another job.

An “unsuccessful” job ending is generally defined as being fired from or quitting a job without another one in place (9,10). Among such job endings, quitting is more common (9–12), although clients may quit in anticipation of being fired because of work performance problems (9). The reasons for unsuccessful job endings vary to some extent depending on perspective, with clients more likely to cite external and uncontrollable factors (12) and employment specialists more likely to cite clinical or interpersonal factors (9). The most common reason for quitting tends to be dissatisfaction with the job, followed by issues related to the

person’s mental illness, interpersonal difficulties, or health problems (9–11,13).

Understanding the nature of job endings in supported employment programs has implications for improving vocational services and work outcomes. Although competitive work has many benefits (14), even greater gains accrue when people achieve sustained employment. For example, in a five-year controlled trial Hoffman and colleagues (15) reported that persons who received supported employment were more likely than those receiving usual vocational services to work competitively, to work for longer periods, and to be less likely to be hospitalized. Furthermore, persons who received supported employment had greater improvements in quality of life, which were mediated by longer periods of employment (16).

Most studies of job endings have been conducted in supported employment programs. However, research has not investigated job endings among persons receiving supported employment and interventions targeting cognitive functioning (for example, attention and memory). Increasing evidence shows that combining cognitive remediation with

vocational rehabilitation can improve cognitive and work outcomes compared with vocational services alone (17), raising the question of whether cognitive remediation influences the nature of job endings.

This study sought to explore differences in job endings in a controlled study evaluating the effects of cognitive remediation on individuals enrolled in supported employment. A unique feature was that the study focused on individuals who had not benefited from supported employment. Abundant research shows that cognitive impairment is related to worse work outcomes in this population, including among persons receiving supported employment (18,19). Because supported employment does not typically address cognitive challenges (20–22), we sought to enhance vocational services for all study participants by training employment specialists in recognizing cognitive impairments and teaching coping strategies to reduce effects of these impairments on work. We hypothesized that compared with participants who received enhanced supported employment only, those who also received cognitive remediation would have fewer unsuccessful job endings, more successful job endings, and more successful work trajectories.

## METHODS

We conducted an analysis of data collected for a randomized controlled trial at two sites (Manchester, New Hampshire, and Chicago), conducted between April 2006 and October 2011, evaluating the effects of adding cognitive remediation (the Thinking Skills for Work program) to supported employment for persons who had not previously benefited from supported employment (23). Supported employment was enhanced for all participants by training employment specialists in recognizing cognitive impairments and strategies for managing cognitive challenges related to work. The primary findings were that over the two-year study, participants in Thinking Skills for Work improved significantly more in cognitive functioning and competitive work than those in enhanced supported employment only (23).

The analyses reported here focused on the work trajectories and job endings of participants who worked competitively during the study. These data have not been previously published. All study procedures were approved by local institutional review boards and monitored by a data safety and monitoring board.

### Participants

A total of 107 participants were randomly assigned to Thinking Skills for Work (N=57) or enhanced supported employment only (N=50), of whom four and three in each group, respectively, withdrew during the study. Data for the participants who withdrew were used up to the point at which they withdrew. Inclusion criteria were as follows: meets the New Hampshire or Illinois state definition of severe mental illness, enrolled in supported employment for at least three months and within that period did not work

competitively or was fired or quit a job lasting less than three months, wants to work, and no evidence of a general medical condition with profound effects on brain functioning.

Over the two-year study period, 52 of the 107 participants (49%) worked competitively. Because this study focused on participants who worked, we compared the workers with nonworkers on treatment group assignment, baseline demographic and diagnostic characteristics, and work history (Table 1). Only two differences were significant: participants with a history of competitive work were more likely to work, as were participants in Thinking Skills for Work. Participants in the two groups did not differ in work history at baseline (23).

### Measures

*DSM-IV* psychiatric diagnosis was established with the Structured Clinical Interview for *DSM-IV* (24). A battery of cognitive and clinical assessments was administered at baseline and subsequent intervals (results are not reported here). Work was tracked weekly by research assistants through contacts with employment specialists, participants, treatment team members, or family. Information about hours worked, wages earned, and benefits was collected for all jobs.

Jobs that ended were classified into one of the following four categories on the basis of all available information: temporary position or laid off (termination of job by employer for reasons unrelated to participant performance); fired (termination of job by employer due to performance or attendance problems); participant quit without arranging new position; and participant quit to take another job. For each job ending, the employment specialist, the client, or both indicated which of 32 factors contributed to the job ending, with multiple factors allowed. These factors were related to the psychiatric disorder (for example, symptoms or cognitive impairment), job performance (for example, poor attendance or inability to perform job tasks), the participant (for example, concern over loss of entitlements or health problems), the job (for example, dissatisfaction with job duties or problems with supervisor), or job access (for example, transportation issues). In addition, the respondent indicated which specific factor was the most important reason for the job ending.

Jobs were also classified into two categories (9). Unsuccessful jobs were those from which participants were fired regardless of length of employment or jobs that participants quit within the first 90 days without having another position in place. Successful jobs were ones that participants terminated in order to take another position (regardless of length) or that lasted more than 90 days and did not end unsuccessfully (for example, temporary jobs or jobs from which the participant was laid off) were not classified as successful or unsuccessful because of their relatively brief tenure.

Four different work trajectories were characterized: successful workers (participants with only successful job

**TABLE 1. Characteristics of study participants who did not achieve competitive work and of those who did**

| Characteristic                        | Did not work<br>(N=55) |    | Worked<br>(N=52) |    |
|---------------------------------------|------------------------|----|------------------|----|
|                                       | N                      | %  | N                | %  |
| Age (M±SD)                            | 44.49±11.68            |    | 43.69±10.45      |    |
| Treatment group <sup>a</sup>          |                        |    |                  |    |
| Thinking Skills for Work              | 23                     | 42 | 34               | 65 |
| Enhanced supported employment only    | 32                     | 58 | 18               | 35 |
| Site                                  |                        |    |                  |    |
| Manchester, NH                        | 38                     | 69 | 38               | 73 |
| Chicago                               | 17                     | 31 | 14               | 27 |
| Male                                  | 40                     | 73 | 30               | 58 |
| Hispanic                              | 8                      | 14 | 4                | 8  |
| Race                                  |                        |    |                  |    |
| White                                 | 46                     | 84 | 46               | 88 |
| Black or African American             | 8                      | 14 | 3                | 6  |
| Asian                                 | 0                      | —  | 2                | 4  |
| More than one race                    | 1                      | 2  | 1                | 2  |
| Marital status                        |                        |    |                  |    |
| Never married                         | 39                     | 71 | 30               | 58 |
| Married                               | 5                      | 9  | 5                | 10 |
| Separated                             | 0                      | —  | 4                | 8  |
| Divorced                              | 10                     | 18 | 11               | 21 |
| Widowed                               | 1                      | 2  | 2                | 4  |
| Education                             |                        |    |                  |    |
| Less than high school                 | 17                     | 31 | 14               | 27 |
| High school, GED, or more             | 38                     | 69 | 38               | 73 |
| Diagnosis                             |                        |    |                  |    |
| Schizophrenia                         | 14                     | 25 | 11               | 21 |
| Schizoaffective disorder              | 13                     | 24 | 11               | 21 |
| Bipolar disorder                      | 11                     | 20 | 14               | 27 |
| Major depression                      | 10                     | 18 | 8                | 15 |
| Other                                 | 7                      | 13 | 8                | 15 |
| Current substance use disorder        |                        |    |                  |    |
| None                                  | 39                     | 72 | 36               | 69 |
| Alcohol use disorder                  | 3                      | 6  | 2                | 4  |
| Drug use disorder                     | 7                      | 13 | 6                | 11 |
| Alcohol and drug use disorder         | 5                      | 9  | 8                | 15 |
| Lifetime substance use disorder       |                        |    |                  |    |
| None                                  | 19                     | 35 | 22               | 42 |
| Alcohol use disorder                  | 10                     | 18 | 7                | 13 |
| Drug use disorder                     | 10                     | 18 | 5                | 10 |
| Alcohol and drug use disorder         | 15                     | 28 | 18               | 35 |
| Competitive work history <sup>b</sup> | 4                      | 7  | 15               | 29 |
| Competitive work in past 5 years      | 32                     | 63 | 36               | 71 |

<sup>a</sup> Significant between-group difference ( $\chi^2 = 5.96$ ,  $N=107$ ,  $df=1$ ,  $p=.015$ )

<sup>b</sup> Defined as having 12 consecutive months of full-time work at the same job. Significant between-group difference ( $\chi^2 = 8.52$ ,  $N=107$ ,  $df=1$ ,  $p=.004$ )

endings or more successful than unsuccessful job endings), only successful workers (participants with only successful job endings), successful workers at the end of the study (participants currently employed for three or more months at study completion), and unsuccessful workers (participants who had only unsuccessful job endings or had only temporary jobs or who had more unsuccessful than successful job endings). The first three trajectories overlap with each other because we were interested in whether

participants who worked in the two programs differed more according to one definition of successful outcome than another. The unsuccessful-worker trajectory was mutually exclusive with the first two successful-worker trajectories.

### Treatment Programs

All participants continued to receive their usual psychiatric services throughout the study, including supported employment.

*Enhanced supported employment.* Supported employment was based on the individual placement and support model (20), which was enhanced by teaching employment specialists about cognitive impairments that interfere with work functioning and strategies to help participants cope with them (25). For example, a participant could be taught to repeat back verbal instructions to facilitate attention and increase accurate recall. Each employment specialist served participants in both programs.

*Thinking Skills for Work Program.* At each site the program was provided by a cognitive specialist who was an experienced clinical staff member paid by the grant and who was a member of the supported employment team who integrated cognitive with vocational services (23). Participants received 24 weekly one-hour sessions of individual computerized cognitive practice with Cogpack software over six months, facilitated by the cognitive specialist who provided coaching to improve cognitive performance. The cognitive specialist also provided training in self-management strategies for cognitive difficulties and worked with the employment specialist to prompt their use as needed.

### Statistical Analysis

We conducted chi-square analyses across all job endings to evaluate whether participants in Thinking Skills for Work differed on the types of endings from those in enhanced

supported employment only. Next, across all job endings, we conducted chi-square analyses to compare the two groups on the most important reason cited for the job ending and any reason for the job ending.

We then evaluated whether the two groups differed on the number of participants with at least one successful job and on the number of participants with at least one unsuccessful job or only temporary jobs by conducting chi-square analyses. Last, to compare the two groups on the four

different job trajectories across the study, we conducted chi-square analyses for each trajectory. The significance level was set at  $p < .05$  for all statistical tests.

## RESULTS

The 52 participants who worked during the two-year study obtained a total of 99 competitive jobs; information about one of the 99 jobs was missing. The primary source of job information was the employment specialist for 50 jobs (51%), the client for 39 jobs (40%), and both specialist and client for nine jobs (9%). A chi-square test indicated that the two treatment groups did not differ in sources of information about jobs.

Of the 98 jobs obtained, 71 ended and 27 did not. Of the 27 jobs that did not end, 20 were held by participants in Thinking Skills for Work and seven were held by participants in enhanced supported employment only, a significant difference ( $\chi^2 = 3.88$ ,  $N = 98$ ,  $df = 1$ ,  $p = .039$ ).

The different types of job endings are summarized in Table 2. The most common type of ending was related to temporary positions or layoffs (37%), followed by the participant's quitting without another job in place (34%), being fired (21%), and terminating to take another job (8%). Among the 26 jobs that were temporary or from which the participant was laid off, 11 (42%) lasted three months or more. The two groups did not differ significantly in any of the types of job endings.

### Reasons for Job Endings

The various reasons for job endings in each group are summarized in Table 3. Across both groups, the most important reason was that the position was discontinued (35%), reflecting the temporary nature of many of the jobs. The next most important reason was dissatisfaction with the job (17%), followed by psychiatric symptoms or relapse (13%), work performance issues (11%), and stress and pressures (8%). Regarding any reason for the job ending, discontinuation of the job was again the most common reason across both groups (38%). The next most common reasons were stress and pressures (37%), work performance issues (30%), dissatisfaction with the job (28%), and symptoms or relapse (27%).

There were few differences between the two groups in the reasons for job endings. However, participants in Thinking Skills for Work were significantly less likely than those in enhanced supported employment only to cite dissatisfaction with the job as the most important reason for the job ending (5% versus 29%, respectively) and as any reason for the job ending (13% versus 44%, respectively).

### Successful Versus Unsuccessful Jobs

A total of 23 participants (70%) in Thinking Skills for Work had at least one successful job, compared with ten participants (56%) in enhanced supported employment only, a nonsignificant difference. In addition, 15 participants (47%) in

**TABLE 2. Types of job endings for participants in Thinking Skills for Work and enhanced supported employment only**

| Type of ending                          | Thinking Skills for Work (N=37 jobs) |    | Enhanced supported employment only (N=34 jobs) |    | Total (N=71 jobs) |    |
|-----------------------------------------|--------------------------------------|----|------------------------------------------------|----|-------------------|----|
|                                         | N                                    | %  | N                                              | %  | N                 | %  |
| Laid off or temporary position          | 14                                   | 38 | 12                                             | 35 | 26                | 37 |
| Quit without arranging new position     | 12                                   | 32 | 12                                             | 35 | 24                | 34 |
| Fired                                   | 8                                    | 22 | 7                                              | 21 | 15                | 21 |
| Terminated to assume different position | 3                                    | 8  | 3                                              | 9  | 6                 | 8  |

Thinking Skills for Work had at least one unsuccessful job or only temporary jobs versus 13 participants (72%) in enhanced supported employment only, also a nonsignificant difference.

### Job Trajectories

A total of 23 participants (68%) in Thinking Skills for Work were classified as successful workers versus eight (44%) in enhanced supported employment only, a nonsignificant difference. However, 17 (52%) participants in Thinking Skills for Work had only successful jobs versus four (22%) in enhanced supported employment only ( $\chi^2 = 4.13$ ,  $N = 51$ ,  $df = 1$ ,  $p = .042$ ). Furthermore, nine participants (26%) in Thinking Skills for Work were classified as unsuccessful workers versus 10 (56%) in enhanced supported employment only ( $\chi^2 = 4.29$ ,  $N = 52$ ,  $df = 1$ ,  $p = .038$ ). Finally, 15 participants (45%) in Thinking Skills for Work were working successfully at the end of the study versus only five (28%) in enhanced supported employment only, a nonsignificant difference. However, when this variable was examined in the full study sample ( $N = 107$ ), the difference between the two groups was significant, with 26% ( $N = 15$ ) of participants in Thinking Skills for Work employed at the end of the study, compared with only 10% ( $N = 5$ ) of those in enhanced supported employment only ( $\chi^2 = 4.67$ ,  $N = 107$ ,  $df = 1$ ,  $p = .026$ ). Figure 1 illustrates the different work trajectories of study participants.

## DISCUSSION AND CONCLUSIONS

The overall pattern of job endings for participants in the Thinking Skills for Work and enhanced supported employment only programs was similar to patterns in other studies of supported employment. The most common type of job ending was that the job was temporary or the participant was laid off (37%) (Table 2); this rate is somewhat higher than the 10%–33% reported in prior studies (9–11,26). As in the other studies, unsuccessful job endings predominated;

**TABLE 3. Reasons for job endings among participants in Thinking Skills for Work (TSW) and enhanced supported employment only (enhanced SE)**

| Reason                                     | Most important reason |                |                                  |                 |                         |    | Any reason            |                 |                                  |                 |                         |    |
|--------------------------------------------|-----------------------|----------------|----------------------------------|-----------------|-------------------------|----|-----------------------|-----------------|----------------------------------|-----------------|-------------------------|----|
|                                            | TSW<br>(N=37<br>jobs) |                | Enhanced<br>SE<br>(N=34<br>jobs) |                 | Total<br>(N=71<br>jobs) |    | TSW<br>(N=37<br>jobs) |                 | Enhanced<br>SE<br>(N=34<br>jobs) |                 | Total<br>(N=71<br>jobs) |    |
|                                            | N                     | %              | N                                | %               | N                       | %  | N                     | %               | N                                | %               | N                       | %  |
| Position discontinued or company downsized | 14                    | 38             | 11                               | 32              | 25                      | 35 | 15                    | 41              | 12                               | 35              | 27                      | 38 |
| Dissatisfaction with job                   | 2                     | 5 <sup>a</sup> | 10                               | 29 <sup>a</sup> | 12                      | 17 | 5                     | 13 <sup>b</sup> | 15                               | 44 <sup>b</sup> | 20                      | 28 |
| Psychiatric symptoms or relapse            | 7                     | 19             | 2                                | 6               | 9                       | 13 | 11                    | 30              | 8                                | 24              | 19                      | 27 |
| Performance issues                         | 5                     | 14             | 3                                | 9               | 8                       | 11 | 13                    | 35              | 8                                | 24              | 21                      | 30 |
| Stress or pressures                        | 1                     | 3              | 5                                | 15              | 6                       | 9  | 14                    | 38              | 12                               | 35              | 26                      | 37 |
| Problems with supervisors or colleagues    | 3                     | 8              | 0                                | —               | 3                       | 4  | 6                     | 16              | 5                                | 15              | 11                      | 16 |
| General medical problems                   | 3                     | 8              | 1                                | 3               | 4                       | 6  | 5                     | 14              | 2                                | 6               | 7                       | 10 |
| Transportation issues                      | 1                     | 3              | 1                                | 3               | 2                       | 3  | 2                     | 5               | 3                                | 9               | 5                       | 7  |
| Advancement to a better position           | 1                     | 3              | 1                                | 3               | 2                       | 3  | 0                     | —               | 0                                | —               | 0                       | —  |
| Problems with physical job environment     | 0                     | —              | 0                                | —               | 0                       | —  | 7                     | 19              | 2                                | 6               | 9                       | 13 |
| No job accommodations provided             | 0                     | —              | 0                                | —               | 0                       | —  | 2                     | 5               | 3                                | 9               | 5                       | 7  |
| Child care problems                        | 0                     | —              | 0                                | —               | 0                       | —  | 0                     | — <sup>c</sup>  | 5                                | 15 <sup>c</sup> | 5                       | 7  |
| Perceived discrimination                   | 0                     | —              | 0                                | —               | 0                       | —  | 2                     | 5               | 0                                | —               | 2                       | 3  |
| Client left agency or program              | 0                     | —              | 0                                | —               | 0                       | —  | 1                     | 2               | 2                                | 6               | 3                       | 4  |
| Client moved                               | 0                     | —              | 0                                | —               | 0                       | —  | 0                     | —               | 1                                | 3               | 1                       | 1  |
| Concern over loss of entitlements          | 0                     | —              | 0                                | —               | 0                       | —  | 0                     | —               | 1                                | 3               | 1                       | 1  |

<sup>a</sup> Significant between-group difference ( $\chi^2=7.27$ ,  $N=71$ ,  $df=1$ ,  $p=.007$ )

<sup>b</sup> Significant between-group difference ( $\chi^2=8.20$ ,  $N=71$ ,  $df=1$ ,  $p=.004$ )

<sup>c</sup> Significant between-group difference ( $\chi^2=5.85$ ,  $N=71$ ,  $df=1$ ,  $p=.016$ )

quitting without another job in place was the most common (34%), followed by being fired (21%). In fact, only 8% of the jobs ended because the participant took another job.

Although the two groups did not differ in types of job endings, they differed in one reason for job endings: participants in Thinking Skills for Work were significantly less likely than those in enhanced supported employment only to cite dissatisfaction with the job as either the primary reason for the job ending (5% versus 29%, respectively) or as any reason for the job ending (13% versus 44%, respectively). This is important considering that job dissatisfaction is the most common reason for jobs ending in supported employment (7–9).

Comparisons between the two groups indicated no significant differences in the number of participants with successful versus unsuccessful jobs or jobs that were temporary or from which they were laid off. However, the work trajectories revealed some significant differences between the groups: participants in Thinking Skills for Work were more likely than those in Enhanced Supported Employment only to have only successful jobs (52% versus 22%, respectively), and were less likely to have an overall unsuccessful job trajectory (26% versus 56%, respectively). Furthermore, among all study participants, those in Thinking Skills for Work were more likely than those in Enhanced Supported Employment only to be successfully employed at the end of the study (26% versus 10%, respectively).

The Thinking Skills for Work program may have contributed to more successful overall work trajectories in part by reducing the chances that participants would quit or be

fired from challenging work situations because of their dissatisfaction with the job. We have observed that people in supported employment sometimes become frustrated and dissatisfied with their jobs when they experience difficulties performing them, drawing criticism and scrutiny from supervisors and coworkers. The Thinking Skills for Work program may have facilitated better job performance through improved cognitive functioning, more effective coping with cognitive challenges, or a combination of both, which could have contributed to feeling more valued by coworkers and supervisors, greater job satisfaction, and fewer unsuccessful job endings. This remains speculative because we did not collect data on participants'

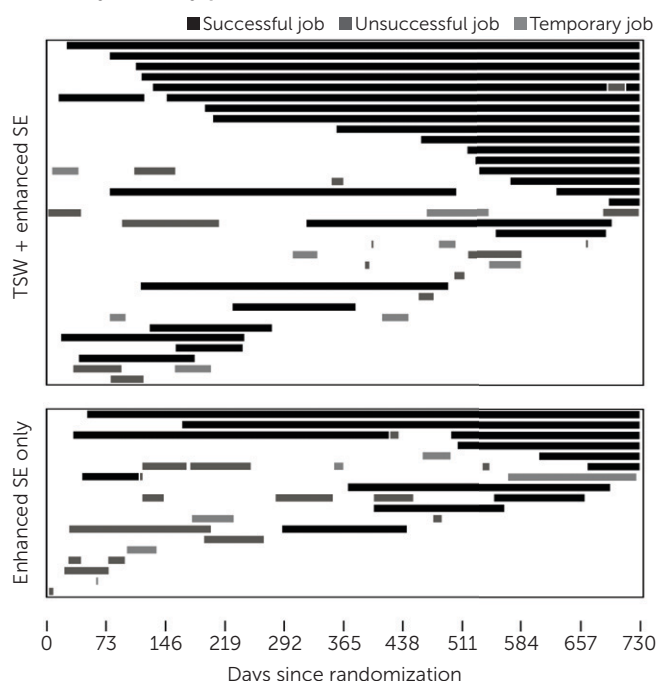
use of cognitive coping strategies, nor have we evaluated whether gains in cognitive functioning mediate better employment outcomes in this program.

It is also possible that Thinking Skills for Work helped participants improve their hardiness and ability to tolerate the inevitable stresses and frustrations of working at any job. The program involves an extensive set of computer-based cognitive exercises, with facilitation from a cognitive specialist who encourages the individual to try hard and not to give up when he or she finds the exercises difficult. This increased capacity for challenging tasks may have enabled participants to remain longer on their jobs despite their frustrations and to eventually resolve them. More research is needed to address these possible explanations.

Several limitations of this study should be noted. The sample size of 52 participants who worked is relatively small and precluded exploration of the interactions between treatment program and participants' clinical and cognitive functioning. The study design did not control for the amount of treatment provided to the two groups, and thus attention from the cognitive specialist rather than cognitive remediation could account for the better work outcomes of participants in Thinking Skills for Work. Multiple statistical tests were conducted, increasing the chances of spurious findings and underscoring the importance of replicating the results. Because some participants had multiple jobs, the analyses of the 98 job endings violated assumptions of statistical independence of observations. We also did not routinely obtain information about



**FIGURE 1. Job trajectories among 52 participants in TSW + enhanced SE and enhanced SE only who worked over the two-year study period<sup>a</sup>**



<sup>a</sup>TSW, Thinking Skills for Work. SE, supported employment

job endings from both participants and employment specialists, preventing a direct comparison of the two perspectives. Last, the study was unusual in that it focused on individuals who had not benefited from supported employment (20), indicating the importance of evaluating the effects of Thinking Skills for Work on job endings and work trajectories in more representative samples of people receiving supported employment.

These limitations notwithstanding, the results have potentially important implications. The findings that participants in the Thinking Skills for Work program had fewer job endings because of dissatisfaction with their job and had more successful work trajectories over the two-year study period suggest that the program facilitated the ability of people to rise up and meet the demands of their jobs. These effects may be one of the reasons why participants in Thinking Skills for Work were more likely to be employed at the end of the study and suggests that they may be poised to reap the financial, clinical, and quality-of-life benefits of prolonged employment (15,16).

#### AUTHOR AND ARTICLE INFORMATION

The authors are with the Center for Psychiatric Rehabilitation, Boston University, Boston. Send correspondence to Dr. McGurk (e-mail: mcgurk@bu.edu).

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#### REFERENCES

- Bond GR, Salyers MP, Dincin J, et al: A randomized controlled trial comparing two vocational models for persons with severe mental illness. *Journal of Consulting and Clinical Psychology* 75: 968–982, 2007
- Burns T, Catty J, Becker T, et al: The effectiveness of supported employment for people with severe mental illness: a randomised controlled trial. *Lancet* 370:1146–1152, 2007
- Drake RE, McHugo GJ, Bebout RR, et al: A randomized clinical trial of supported employment for inner-city patients with severe mental disorders. *Archives of General Psychiatry* 56:627–633, 1999
- Drake RE, McHugo GJ, Becker DR, et al: The New Hampshire study of supported employment for people with severe mental illness. *Journal of Consulting and Clinical Psychology* 64:391–399, 1996
- Lehman AF, Goldberg R, Dixon LB, et al: Improving employment outcomes for persons with severe mental illnesses. *Archives of General Psychiatry* 59:165–172, 2002
- Mueser KT, Clark RE, Haines M, et al: The Hartford study of supported employment for persons with severe mental illness. *Journal of Consulting and Clinical Psychology* 72:479–490, 2004
- Bond GR, Kukla M: Impact of follow-along support on job tenure in the individual placement and support model. *Journal of Nervous and Mental Disease* 199:150–155, 2011
- Bond GR, Kukla M: Is job tenure brief in individual placement and support (IPS) employment programs? *Psychiatric Services* 62: 950–953, 2011
- Becker DR, Drake RE, Bond GR, et al: Job terminations among persons with severe mental illness participating in supported employment. *Community Mental Health Journal* 34:71–82, 1998
- Mak DC, Tsang HW, Cheung LC: Job termination among individuals with severe mental illness participating in a supported employment program. *Psychiatry* 69:239–248, 2006
- Cook JA, Burke-Miller JK: Reasons for job separations in a cohort of workers with psychiatric disabilities. *Journal of Rehabilitation Research and Development* 52:371–384, 2015
- Lancôt N, Bergeron-Brossard P, Sanquirgo N, et al: Causal attributions of job loss among people with psychiatric disabilities. *Psychiatric Rehabilitation Journal* 36:146–152, 2013
- Netto JA, Yeung P, Cocks E, et al: Facilitators and barriers to employment for people with mental illness: a qualitative study. *Journal of Vocational Rehabilitation* 44:61–72, 2016
- Bouwman C, de Sonnevile C, Mulder CL, et al: Employment and the associated impact on quality of life in people diagnosed with schizophrenia. *Neuropsychiatric Disease and Treatment* 11:2125–2142, 2015
- Hoffmann H, Jäckel D, Glauser S, et al: Long-term effectiveness of supported employment: 5-year follow-up of a randomized controlled trial. *American Journal of Psychiatry* 171:1183–1190, 2014
- Jäckel D, Kupper Z, Glauser S, et al: Effects of sustained competitive employment on psychiatric hospitalizations and quality of life. *Psychiatric Services* 68:603–609, 2017
- Chan JY, Hirai HW, Tsoi KK: Can computer-assisted cognitive remediation improve employment and productivity outcomes of patients with severe mental illness? A meta-analysis of prospective controlled trials. *Journal of Psychiatric Research* 68: 293–300, 2015

18. McGurk SR, Mueser KT: Cognitive functioning, symptoms, and work in supported employment: a review and heuristic model. *Schizophrenia Research* 70:147–173, 2004
19. Evans JD, Bond GR, Meyer PS, et al: Cognitive and clinical predictors of success in vocational rehabilitation in schizophrenia. *Schizophrenia Research* 70:331–342, 2004
20. Becker DR, Drake RE: *A Working Life for People With Severe Mental Illness*. New York, Oxford University Press, 2003
21. Swanson SJ, Becker DR: *Supported Employment: Applying the Individual Placement and Support (IPS) Model to Help Clients Compete in the Workforce*. Center City, MN, Hazelden, 2011
22. Swanson SJ, Becker DR, Drake RE, et al: *Supported Employment: A Practical Guide for Practitioners and Supervisors*. Kearny, NE, Morris Publishing, 2008
23. McGurk SR, Mueser KT, Xie H, et al: Cognitive enhancement treatment for people with mental illness who do not respond to supported employment: a randomized controlled trial. *American Journal of Psychiatry* 172:852–861, 2015
24. First MB, Spitzer RL, Gibbon M, et al: *Structured Clinical Interview for DSM-IV Axis-I Disorders–Patient Edition (SCID-I/P, Version 2.0)*. New York, New York State Psychiatric Institute, Biometrics Research Department, 1996
25. McGurk SR, Mueser KT: Strategies for coping with cognitive impairments of clients in supported employment. *Psychiatric Services* 57:1421–1429, 2006
26. Wong KK, Chiu SN, Chiu LP, et al: A supported competitive employment programme for individuals with chronic mental illness. *Hong Kong Journal of Psychiatry* 11:13–18, 2001