Relationships Between Psychiatric Symptomatology, Work Skills, and Future Vocational Performance

William A. Anthony, Ph.D.
E. Sally Rogers, Sc.D.
Mikal Cohen, Ph.D.
Roger R. Davies, Sc.D.

Objective: Experts do not agree on what, if any, relationships exist between diagnosis, symptomatology, work skills, and the future vocational performance of persons with severe mental illness. The objective of this study was to longitudinally examine such relationships, using a sample of clients who were attending psychosocial rehabilitation programs. Methods: Subjects were 275 clients of three psychosocial rehabilitation programs who had expressed a vocational goal. They were assessed at intake into the study and then quarterly until they left the rehabilitation program. The variables examined included symptoms, measured by the Brief Psychiatric Rating Scale; diagnosis; work skills, measured by the Griffiths Work Behavior Scale; and vocational status at end-point. Results: Among subjects remaining in the study for one year, both symptomatology and work skills improved significantly. Moderately significant negative correlations were found between symptoms and work skills; subjects who became employed had lower symptom scores and higher work skills than persons who never became employed. Conclusions: Although a moderate relationship was found between symptomatology and work skills, symptoms should not be considered a proxy measure for vocational functioning among persons with severe mental illness. Participation in psychosocial rehabilitation programs appeared to have a salutary effect on symptoms and work skills. (Psychiatric Services 46:353–358, 1995)

A substantial amount of research suggests that vocational performance is not highly related to psychiatric symptomatology. For example, Anthony and associates (1) reviewed studies that, taken together, appear to indicate that no particular symptom or symptom pattern is consistently related to the vocational performance of persons with psychiatric disabilities. In studies covered in their review, symptoms or characteristics found not to correlate with vocational outcome included tension, distress or alienation, and antisocial behavior (2); depression, anxiety, paranoid hostility, and deteriorated thought (3); alertness, orientation, and use of defenses (4); anxiety, verbal hostility, and depression (5); thought disorder, depression, and flattened emotion (6,7); confusion, mania, and depression (8); and global psychopathological state (9).

Further, Strauss and Carpenter (10) found that 30 of 32 measures of psychiatric signs and symptoms were not significantly correlated with employment. Similarly, Wilson and co-workers (11) reported that "very few" of the psychiatric variables incorporated in their investigation were able to differentiate vocational successes from failures.

Other studies have reported positive correlations between measures of work adjustment skills and vocational outcomes. Anthony and Jansen's review (12) indicated that in every study in which work adjustment skills were assessed, overall scores were significantly related to future work performance (11,13–19). In their study of situational assessment methods, Bond and Friedmeyer (20) found that four dimensions of work adjustment—work readiness, work attitudes, interpersonal relations, and work quality—were significantly and positively related to later vocational outcome.

Yet other studies have looked at the relationship between psychiatric symptomatology, diagnosis, and work skills. For example, Townes and associates (21) reported no relationship between primary diagnostic category and skill level. Other researchers have found that hospitalization and drug treatment may have a positive effect on symptomatology, yet have little impact on a person's vocational skills (3,22,23). Englehardt and Rosen (23) concluded that although psychotropic medication affects symptomatology, "evidence for a direct effect of pharmacotherapy on the work performance of schizophrenic patients is, so far, lacking."

Similarly, researchers who have reported increases in skill performance have not found corresponding decreases in symptoms (24). Other investigators have reported that hospitalization alone, or in combination with drug treatment, significantly reduces symptoms, but does not result in a corresponding increase in role performance (25–27).

The authors are affiliated with the Center for Psychiatric Rehabilitation at Boston University, Dr. Anthony as executive director, Dr. Rogers as director of research, Dr. Cohen as associate executive director, and Dr. Davies as a postdoctoral fellow. Address correspondence to Dr. Rogers at the center, 930 Commonwealth Avenue, Boston, Massachusetts 02215.

On the other hand, numerous other studies have suggested that symptomatology is related to vocational outcomes. For example, Coryell and his colleagues (28–32) conducted several long-term follow-up studies that suggested that subjects with psychotic-like features, compared with subjects with neurotic symptoms, experienced poorer role performance, less social contact, and less likelihood of being employed. Coryell and Tsuang's 40-year follow-up (32) also suggested that patients diagnosed as schizophrenic had poorer vocational outcomes.

This finding was also confirmed by two recent vocational outcome studies (33,34) in which subjects with a diagnosis of schizophrenia had poorer vocational outcomes than persons diagnosed as having affective or other disorders. Massel and his colleagues (35), in a study of the work capacity of recipients of Social Security disability benefits, concluded that "both positive and negative symptoms of schizophrenia appear to affect one's ability to work."

The purpose of the study reported here was to examine, longitudinally, the relationships between symptomatology, work skills, diagnosis, and vocational outcomes among participants of psychosocial rehabilitation programs. Only persons who were working toward a vocational goal were admitted to the sample, unlike many other studies that have included data on subjects with no intention of returning to employment. Measures of symptoms and work skills were collected repeatedly, permitting study of their relationship over time as well as their relation to future vocational outcome.

Methods

Subjects and settings. The 275 subjects for this study were drawn from three agencies affiliated with the Center for Psychiatric Rehabilitation at Boston University. Each is a psychosocial rehabilitation agency that uses a psychiatric rehabilitation approach (36), yet each has somewhat different client demographics and program structure.

Any client who entered one of the three agencies after February 1986 and who recently expressed a vocational goal of any kind was considered a study subject. By accepting as subjects only clients who had recently developed a vocational goal or were new to the agency, we avoided taking clients who had either received long-term vocational services before entering the study or who had no intention of becoming employed. When the study ended in July 1989, a total of 275 subjects had entered the study.

Sixty percent of the subjects were male. Seventy percent were white, and 26 percent were black; the rest were Hispanic (1.5 percent), or Native American or Asian (2.5 percent). Their mean age was 35.7 years. The majority had never married (65 percent); however, a sizable proportion had been divorced (22 percent). The remainder were married (8 percent), widowed (1.5 percent), or separated (3.5 percent). Twenty-eight percent of the subjects had not finished high school, 29 percent had a high school diploma, 33.8 percent had attended technical school or some college, and 9.2 percent had a college degree or beyond.

The most frequent diagnosis was schizophrenia (57.1 percent), followed by bipolar disorder or major depression (17.1 percent). Another 19.6 percent of subjects had anxiety, personality, paranoid, or dysthymic disorders, and a small percentage (6.2 percent) had other disorders or diagnostic information for them was missing.

Variables. The major variables on which data were collected included demographic characteristics, treatment history, current diagnosis, present treatment interventions including medications, living status, substance abuse history, criminal justice status, receipt of support services, and employment history. In addition, information about psychiatric symptoms and work skills was collected.

Measures. The Brief Psychiatric Rating Scale (BPRS) (37) was used as a measure of symptomatology. The BPRS is widely used to assess symptoms associated with psychiatric disability; each of the 18 items is rated on a 7-point, Likert-type scale ranging from 1, symptom absent, to 7, symptom very severe. The BPRS has demonstrated adequate reliability and validity. Reliability correlations for BPRS items have been reported as ranging from r=.56 (for the tension item) to r=.87 (for hallucinatory behavior and guilt feelings) (37).

At the beginning of our study, Pearson correlation coefficients for interrater reliability computed on total BPRS scores indicated adequate interrater reliability (r=.63, N=20). For the first and second administrations of the BPRS to study subjects, computation of Cronbach's alpha coefficients suggested a high degree of internal consistency (alpha=.83, N=255, and alpha=.84, N=227).

The 25-item Griffiths Work Behavior Scale (19) was used to assess work skills and employability. The Griffiths scale measures job skills using bipolar statements such as "grasps instructions quickly" versus "cannot grasp instructions." Among the skills rated are doing complicated jobs, working very quickly, working continuously, being eager to work, welcoming supervision, and always finishing work. Each item is scored on a 5-point scale ranging from 1, the least desirable rating, to 5, the most desirable rating.

The Griffiths scale was developed using a sample of persons with severe psychiatric disability. The measure has demonstrated adequate reliability and validity, including interrater reliability between .70 and .84 (using the Spearman rho) and test-retest reliability of .75 (19). In terms of predictive validity, the scale was able to differentiate employed from unemployed subjects ($t=10.2$, $df=26$, $p<.001$) (19).

Before our study began, computation of a Pearson correlation coefficient suggested adequate interrater reliability (r=.78, N=20). Cronbach's alpha coefficients obtained for the first and second administrations of the Griffiths scale indicated a very high degree of internal consistency (alpha=.96, N=260, and alpha=.95, N=217).

Procedures. As noted, a client was identified as a study subject if he or she entered one of the three agencies after February 1986 and had recently

Table 1
Reasons 213 clients in psychosocial rehabilitation programs entered follow-up status during the study period

Reasons	N	%
Employment	83	38.9
Left agency	57	26.8
Relapse of psychiatric symptoms	12	5.6
Geographical move	8	3.8
Transfer to other agency	7	3.3
Returned to school	7	3.3
Not suitable for program	7	3.3
Physical illness	5	2.3
Death	2	.9
Other[1]	25	11.7

[1] Examples are pregnancy, noncompliance with agency rules, termination of funding, referral for substance abuse services, and reason not specified.

developed a vocational goal. Within four weeks after a client was identified as a subject, a study intake assessment was completed; it consisted of administration of the BPRS and the Griffiths scale by clinicians in the client's program and compilation of demographic information through interview and record review. The Griffiths scale was completed by observation of the client in the program's simulated work setting.

Assessments were repeated quarterly until the subject left the vocational program or the study ended. When a subject left the program, he or she was then considered to be on follow-up status; attempts were made to contact the client at three, six, and 12 months after departure to determine the client's vocational status. Assessments of symptoms and work skills could not be made for subjects on follow-up status because they could not be observed or interviewed.

Results

During the study, 213 of the 275 subjects entered follow-up status. Table 1 shows the reasons they did so; the largest number (83, or 38.9 percent) became employed. The next largest number of subjects (57, or 26.8 percent) entered follow-up status because they left the agency. Because of the number of clients entering follow-up status, no comparisons were made beyond the fourth quarterly assessment.

Changes in BPRS and Griffiths scores over time. Ratings of symptomatology on the BPRS were relatively low at intake and did not vary greatly during the study. A BPRS score of 3 indicates mild symptoms; at intake, subjects' mean score on 17 of the 18 items was below 3. The exception was anxiety, for which subjects had a mean intake score of 3.27.

Symptoms on which subjects had the lowest scores at intake were disorientation, grandiosity, hallucinatory behavior, uncooperativeness, and unusual thought content. Symptoms on which they had the highest scores were anxiety, tension, depression, somatic concern, and emotional withdrawal.

Scores on subscales of positive and negative BPRS symptoms were also computed, using Guelfi and associates' procedure (39). Positive symptoms include hallucinatory behavior, thought disorder, grandiosity, and suspiciousness; negative symptoms include blunted affect, withdrawal, motor retardation, and mannerisms and posturing. Subjects' mean score on the positive symptoms subscale at intake was 1.72; their mean score on the negative symptoms subscale was 2.20. A paired t-test confirmed that subjects' negative symptoms were higher than positive symptoms at intake ($p<.0001$).

In spite of the generally low overall symptom scores, a small percentage of subjects were highly symptomatic at intake and scored in the upper ranges of the scale.

For the 79 subjects who were present at intake and at the fourth quarterly assessment, a significant decrease in symptomatology scores was found ($t=4.16$, $df=79$, $p=.02$). Analysis of the differences in subjects' scores for positive and negative symptoms between those two time points indicated that negative symptoms accounted for the overall change in symptomatology (for negative symptoms, $p<.001$; for positive symptoms, $p=.625$).

Subjects' mean scores on the Griffiths Work Behavior Scale at intake ranged from 2.72 to 3.40 for each of the 25 items; 3 is considered "about average." The highest scores at intake were on items measuring attitude toward authority and ability to finish work. The lowest scores were on items measuring good judgment, self-confidence, initiative, and the tendency to "take a prominent part in things."

Table 2
Correlations between mean scores on the Brief Psychiatric Rating Scale and the Griffiths Work Behavior Scale for subjects at intake and those available for four quarterly assessments

Time	N	r	p
Intake	265	−.37	<.0001
Assessment 1	221	−.34	<.0001
Assessment 2	164	−.34	<.0001
Assessment 3	111	−.35	<.0002
Assessment 4	78	−.23	<.04

For the 76 subjects present at intake and at the fourth quarterly assessment, a significant increase in work skills was found ($t=4.16$, $df=76$, $p=.03$).

Relationship between symptoms and work skills. Pearson correlations coefficients were computed to examine the relationship between mean ratings of symptomatology and work behavior at intake and at the four quarterly assessments. Table 2 shows that moderately significant negative correlations were found at all five time points.

These negative correlations suggested that higher symptom ratings were associated with lower work-behavior scores. Yet only about 10 to 15 percent of the variability in work skills could be accounted for by symptomatology. Further analyses suggested a stronger and more consistent relationship between negative symptoms and work skills (a range of −.13 to −.39) than between positive symptoms and work skills (a range of −.05 to −.24).

Relationships of variables to employment outcome. The 213 subjects who entered follow-up status were grouped according to their employment status—employed and unemployed—so that the symptoms and work skills of the two groups could be compared. Subjects were judged

Table 3
Mean Brief Psychiatric Rating Scale scores[1] at intake and at four quarterly assessments for subjects who entered follow-up status (N=213), by employment status[2]

Time	N	Mean	SD
Employed subjects			
Intake	109	35.96[3]	11.18
Assessment 1	93	35.33[3]	11.61
Assessment 2	57	34.68[3]	10.92
Assessment 3	41	36.87	12.11
Assessment 4	24	34.87	11.74
Unemployed subjects			
Intake	97	40.17	12.00
Assessment 1	79	40.49	12.25
Assessment 2	60	41.18	13.85
Assessment 3	44	40.31	14.02
Assessment 4	30	37.60	14.54

[1] The 18-item BPRS is scored from 1, symptom absent, to 7, symptom very severe; thus the minimum score is 18, and the maximum 126.

[2] Numbers on Tables 3 and 4 differ due to missing data.

[3] Significant difference between employed and unemployed subjects at intake ($t=2.60$, $df=204$, $p=.009$), at assessment 1 ($t=2.83$, $df=170$, $p=.005$), and at assessment 2 ($t=2.80$, $df=115$, $p=.005$)

to be employed if at the specified time point they were working in competitive settings for at least minimum wage; no minimum number of hours was required to be considered employed.

Of the 213 subjects entering follow-up status, 83, or 38.9 percent, entered because of employment; that group represented about 30 percent of all subjects in the study. Employed subjects worked largely in semiskilled and unskilled positions—for instance, as clerical workers, kitchen help, and janitors—and their job tenure varied. Salaries were mainly minimum wage and slightly above.

Table 3 shows that the group of subjects who later became employed had significantly lower symptomatology scores than the unemployed group both at intake and at the subsequent two quarterly assessments. At the third and fourth assessments, employed subjects did not differ from unemployed subjects on the total symptom measure. However, after the third assessment, because of the number of clients entering follow-up status, the number of subjects in each of the two groups decreased significantly, making interpretations more limited.

When the mean Griffiths scores were examined in a similar manner (Table 4), subjects in the employed group had higher Griffiths scores—that is, better work skills—at each assessment period except the third.

For further analysis, the subjects were grouped into four diagnostic categories based on primary axis I *DSM-III* diagnosis. The four categories were schizophrenia; bipolar disorder or major depression; anxiety, personality, paranoid, dysthymic, or developmental disorders; and organic brain disorder, mental retardation, or missing diagnosis. Analyses of variance conducted on Griffiths scores of the diagnostic groups at each quarterly assessment suggested no significant differences between diagnostic groups at any of the five points in time.

Similar diagnostic-group comparisons were made for three subsets of subjects classified by reason for entering follow-up status: became employed, dropped out of the program, and all other reasons. More subjects with a diagnosis of schizophrenia entered follow-up status because they dropped out; more subjects in the anxiety disorder–personality disorder diagnostic category entered follow-up because of employment ($\chi^2=18.61$, $df=4$, $p<.001$).

Table 4
Mean Griffiths Work Behavior Scale scores[1] at intake and at four quarterly assessments for subjects who entered follow-up status (N=213), by employment status[2]

Time	N	Mean	SD
Employed subjects			
Intake	108	79.08[3]	15.90
Assessment 1	91	77.81[3]	16.44
Assessment 2	57	81.35[3]	16.98
Assessment 3	39	83.00	17.64
Assessment 4	24	88.54[3]	14.52
Unemployed subjects			
Intake	97	74.15	16.17
Assessment 1	74	72.16	14.68
Assessment 2	58	71.91	16.50
Assessment 3	39	80.07	17.13
Assessment 4	27	75.11	18.61

[1] The 25-item scale is scored on a 5-point scale from 1, the least desirable rating, to 5, the most desirable; thus the minimum score is 25, and the maximum 125.

[2] Numbers on Tables 3 and 4 differ due to missing data.

[3] Significant difference between employed and unemployed subjects at intake ($t=2.19$, $df=203$, $p=.02$), at assessment 1 ($t=2.30$, $df=163$, $p=.02$), at assessment 2 ($t=3.02$, $df=113$, $p=.003$), and at assessment 4 ($t=2.84$, $df=49$, $p=.006$)

Discussion

Psychiatric symptomatology and lack of skills are two features commonly mentioned in descriptions of persons with long-term psychiatric disabilities. Interestingly, the subjects of this study, on average, received relatively low ratings of symptomatology and moderate ratings of work skills at intake. Such findings are consistent with the research literature (26,27,40), which indicates that persons with long-

term psychiatric disabilities are not continuously and flagrantly symptomatic; flagrant symptomatology is episodic and does not characterize the person's day-to-day activities. In this study, subjects received low ratings of psychiatric symptoms despite being considered severely disabled by numerous criteria such as diagnosis, receipt of Social Security benefits, and use of various mental health services.

We found a moderate negative relationship between ratings of symptoms and ratings of work skills, consistent with the findings of previous studies that have not found a strong relationship between symptomatology and work skills (12,21,41). Only about 10 to 15 percent of the variability in work skills was accounted for by symptomatology.

Furthermore, although work skills did not differ significantly by diagnostic grouping, more individuals with a diagnosis of schizophrenia left the vocational program unemployed. These findings are consistent with two recent studies of vocational interventions for persons with severe mental illness (33,34). Both studies found that subjects with a diagnosis of schizophrenia had poorer employment outcomes than persons with other diagnoses.

Nonetheless, the failure to recognize the fact that skills and symptoms are not highly correlated, and that symptoms cannot be used as a proxy measure of vocational functioning, contributed to the past inability of the Social Security Administration (SSA) to predict the vocational capacity of persons with psychiatric disabilities (12). For example, in its pre-1985 evaluations of mental disorders, SSA inferred that "functional restrictions . . . are the consequences of the symptoms, signs, behaviors" of mental illness (42). In 1985, after litigation and congressional action, SSA amended the procedures (43). The SSA's current adjudication of mental impairment relies heavily on an assessment of the functional limitations imposed by the disability and does appear to be yielding more valid assessments of work capacity.

In a work evaluation study published in 1990, Massel and his colleagues (35) found corroboration for current SSA procedures for determining disability. However, they concluded that a "substantial number of disagreements" still occurred in the classification of disabled and nondisabled persons using a work capacity evaluation. That is, some of the subjects adjudicated by SSA to be disabled performed well in the work capacity evaluation.

That assessments of symptoms and function are essentially redundant was not supported by our study nor by numerous other studies. Our findings suggest that knowledge of someone's psychopathology provides only moderate evidence of that person's functional capacity for work, even among a sample of persons actively pursuing a vocational goal. Symptom measures must be combined with other measures of vocational functioning, and perhaps other social-environmental factors, to obtain a realistic appraisal of vocational capacity.

As expected, these results are consistent with numerous previous studies that have suggested that ratings of work skills correlate positively with vocational outcome (12, 35). Furthermore, clients who remained in the psychosocial program for at least one year experienced decreases in symptoms, particularly negative symptoms, and increases in work skills.

Conclusions

Questions must be raised about the generalizability of previous research, such as that reviewed by Anthony and Jansen (12), in which samples were defined simply as all patients currently or previously hospitalized. As the sample becomes more specific—for example, persons with a psychiatric disability who have a vocational goal and are attending a vocational program—new types of relationships between symptoms, work skills, diagnosis, and vocational outcomes might emerge.

Furthermore, it is much more useful to draw programming implications when the sample is relevant to the question being asked. In other words, the relationships between symptoms, work skills, and employment outcome are much more important if the program is a vocational program as opposed to a hospital-based treatment program. The findings of this study strongly suggest that symptom measures alone provide moderate evidence for predicting vocational functioning or capacity among persons with severe psychiatric disability. Symptoms were moderately but inversely correlated with work skills; negative symptoms had a stronger and more consistent relationship with work skills.

The results stimulate speculation about what major changes might be occurring in persons with psychiatric disability who are participating in vocational rehabilitation programs. Changes in symptomatology and work skills did occur among these subjects, but they could not be considered dramatic. Perhaps other critical dimensions that are as important as the dimensions typically studied are changing. Perhaps the successful pursuit of a vocational goal affects one's self-efficacy or self-esteem, and it may be that these dimensions are affected as well as the skills and symptoms traditionally studied. It may be useful for vocational intervention studies to include these more subjective measures of program impact.

Acknowledgments

This study was supported by a grant from the National Institute on Disability and Rehabilitation Research. The authors thank the participating rehabilitation programs for their cooperation with data collection; they also thank Shannon Kennedy.

References

1. Anthony WA, Cohen MR, Danley KS: The psychiatric rehabilitation approach as applied to vocational rehabilitation, in Vocational Rehabilitation of Persons With Prolonged Psychiatric Disorders. Edited by Ciardiello JA, Bell MD. Baltimore, Johns Hopkins University Press, 1988
2. Lorei TW: Prediction of community stay and employment for released psychiatric patients. Journal of Consulting Psychology 31:349–357, 1967
3. Ellsworth RB, Foster L, Childers B, et al:

Hospital and community adjustment as perceived by psychiatric patients, their families, and staff. Journal of Consulting and Clinical Psychology 32:1–14, 1968

4. Green HJ, Miskimins RW, Keil EC: Selection of psychiatric patients for vocational rehabilitation. Rehabilitation Counseling Bulletin 11:297–302, 1968
5. Gurel L, Lorei TW: Hospital and community ratings of psychopathology as predictors of employment and readmission. Journal of Counseling and Clinical Psychology 34:286–291, 1972
6. Strauss JS, Carpenter WT: The prediction of outcome in schizophrenia: II. relationships between predictor and outcome variables. Archives of General Psychiatry 31:37–42, 1974
7. Strauss JS, Carpenter WT: Characteristic symptoms and outcome in schizophrenia. Archives of General Psychiatry 30:429–434, 1974
8. Schwartz C, Myers J, Astrachan B: Concordance of multiple assessments of the outcome of schizophrenia. Archives of General Psychiatry 32:1221–1227, 1975
9. Möller H, von Zerssen D, Werner-Eilert K, et al: Outcome in schizophrenia and similar paranoid psychoses. Schizophrenia Bulletin 8:99–108, 1982
10. Strauss JS, Carpenter WT: The prediction of outcome in schizophrenia: I. characteristics of outcome. Archives of General Psychiatry 27:739–746, 1972
11. Wilson TL, Berry LK, Miskimins WR: An assessment of characteristics related to vocational success among restored psychiatric patients. Vocational Guidance Quarterly 18: 110–114, 1969
12. Anthony WA, Jansen MA: Predicting the vocational capacity of the chronically mentally ill: research and policy implications. American Psychologist 39:537–544, 1984
13. Cheadle AJ, Cushing D, Drew C, et al: The measurement of the work performance of psychiatric patients. British Journal of Psychiatry 113:841–846, 1967
14. Cheadle AJ, Morgan R: The measurement of work performance of psychiatric patients: a reappraisal. British Journal of Psychiatry 120:437–441, 1972
15. Distefano MK, Pryer MW: Vocational evaluation and successful placement of psychiatric clients in a vocational rehabilitation program. American Journal of Occupational Therapy 24:205–207, 1970
16. Miskimins R, Wilson L, Berry K, et al: Person-placement congruence: a framework for vocational counselors. Personnel and Guidance Journal 47: 789–793, 1969
17. Watts FN: A study of work behavior in a psychiatric rehabilitation unit. British Journal of Social and Clinical Psychology 17:85–92, 1978
18. Ethridge DA: Pre-vocational assessment of the rehabilitation potential of psychiatric patients. American Journal of Occupational Therapy 22:161–167, 1968
19. Griffiths RD: A standardized assessment of the work behavior of psychiatric patients. British Journal of Psychiatry 123:403–408, 1973
20. Bond GR, Friedmeyer MH: Predictive validity of situational assessment at a psychiatric rehabilitation center. Rehabilitation Psychology 32:99–112, 1987
21. Townes BD, Martin DC, Nelson D, et al: Neurobehavioral approach to classification of psychiatric patients using a competency model. Journal of Consulting and Clinical Psychology 53:33–42, 1985
22. Anthony WA, Cohen MR, Vitalo RL: The measurement of rehabilitation outcome. Schizophrenia Bulletin 4:365–383, 1978
23. Englehardt DM, Rosen B: Implications of doing treatment for the social rehabilitation of schizophrenic patients. Schizophrenia Bulletin 2:454–462, 1976
24. Vitalo RL: Teaching improved interpersonal functioning as a preferred mode of treatment. Journal of Clinical Psychology 27:166–171, 1971
25. Dion GL, Tohen M, Anthony WA, et al: Symptoms and functioning of patients with bipolar disorder six months after hospitalization. Hospital and Community Psychiatry 39:652–657, 1988
26. Summers F: The post-acute functioning of the schizophrenic. Journal of Clinical Psychology 37:705–714, 1981
27. Summers F: The effects of aftercare after one year. Journal of Psychiatric Treatment and Evaluation 3:405–409, 1981
28. Coryell W, Lavori P, Endicott J, et al: Outcome in schizoaffective, psychotic, and nonpsychotic depression. Archives of General Psychiatry 41:787–799, 1984
29. Coryell W, Grove W, VanEerdewegh M, et al: Outcome in RDC schizo-affective depression: the importance of diagnostic subtyping. Journal of Affective Disorders 12:47–56, 1987
30. Coryell W, Keller M, Lavori P, et al: Affective syndromes, psychotic features, and prognosis. Archives of General Psychiatry 47:651–657, 1990
31. Tsuang D, Coryell W: An 8-year follow-up of patients with DSM-III-R psychotic depression, schizoaffective disorder, and schizophrenia. American Journal of Psychiatry 150:1182–1188, 1993
32. Coryell W, Tsuang M: DSM-III schizophreniform disorder: comparisons with schizophrenia and affective disorder. Archives of General Psychiatry 39:66–69, 1982
33. Fabian E: Longitudinal outcomes in supported employment: a survival analysis. Rehabilitation Psychology 37:23–35, 1992
34. Jacobs H, Wissusik D, Collier R, et al: Correlations between psychiatric disabilities and vocational outcome. Hospital and Community Psychiatry 43:365–369, 1992
35. Massel HK, Liberman RP, Mintz J, et al: Evaluation of the capacity to work of the mentally ill. Psychiatry 53:31–43, 1990
36. Anthony WA, Cohen M, Farkas MD: Psychiatric Rehabilitation. Boston, Boston University, Center for Psychiatric Rehabilitation, 1990
37. Overall JE, Gorham DR: The Brief Psychiatric Rating Scale. Psychological Reports 10:799–812, 1962
38. Ciarlo JA, Edwards DW, Kiresuk TJ, et al: Final Report: The Assessment of Client-Patient Outcome Techniques for Use in Mental Health Programs. Contract 278–80–00005 (DB). Rockville, Md, National Institute of Mental Health, 1981
39. Guelfi G, Faustman W, Csernansky J: Independence of positive and negative symptoms in a population of schizophrenic patients. Journal of Nervous and Mental Disease 177:285–290, 1989
40. Summers F, Hersh S: Psychiatric chronicity and diagnosis. Schizophrenia Bulletin 9:122–133, 1983
41. Liberman R: Psychiatric Symptoms and the Functional Capacity for Work: Final Report. Los Angeles, University of California, Los Angeles, Clinical Research Center for Schizophrenia and Psychiatric Rehabilitation, 1990
42. US Department of Health and Human Services: Social Security Administration Operations Manual. Washington, DC, US Government Printing Office, 1982
43. Rubenstein L: SSA issues new rules governing mental impairment claims. Clearinghouse, Oct 1985, pp 715–723

Relationships Between Psychiatric Symptomatology, Work Skills, and Future Vocational Performance, Vol. 46(4), p. 353-358, 1995. Copyright 1997, The American Psychiatric Association. Reprinted by permission