

Unique Issues in Assessing Work Function Among Individuals With Psychiatric Disabilities

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With the admission of people who experience psychiatric disabilities in the state-federal vocational rehabilitation system and the Social Security disability rolls in the 1960s, assessment of their capacity to work has been a major concern. Given the rising rates of claims for psychiatric disability in both the public and the private sectors, and the disappointing employment outcomes of people with psychiatric disabilities compared to those with other disabilities, there have been numerous initiatives to accurately assess their employment potential. Historically, such assessment within the Social Security Administration has relied upon evaluation of a person's medical impairment, but numerous studies suggest a weak relationship between measures of psychiatric diagnosis or symptoms and work outcome. Efforts have been undertaken to identify valid and reliable methods of assessing the ability of people with psychiatric disabilities to work. The authors review (a) methods of assessing work function for this population, and (b) the literature on predictors of work functioning and the nature of psychiatric disability, and suggest implications for disability determination policies and for future research.

KEY WORDS: psychiatric disability; work function; assessment.

INTRODUCTION

While 81% of all working age people without disabilities in the United States are employed full or part time, only 32% of all working age people with disabilities are employed (1). For those with severe disabilities, the employment rate is a meager 19%. Of the 4–5 million people with psychiatric disabilities currently in the United States, approximately 30% have a work disability (defined as a limitation or inability to work), and 18% receive Social Security disability benefits (2).

According to a recent study, psychiatric disabilities also account for a large portion of private long-term disability claims and costs (3). The employment rates among people with severe psychiatric disabilities have been fairly consistently documented at below 30% in numerous studies over the past two decades (4–11). Examined from another perspective, a

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recent study conducted in New York found that, compared to individuals with other types of disabilities whose unemployment rate is around 67%, the unemployment rate for people with psychiatric disabilities was 85–92% (12).

Beyond the disability rolls, psychiatric disabilities are now the second most frequent category of disorders served by state–federal vocational rehabilitation (VR) programs in every state (2), and comprise almost 20% of the state VR agencies' caseload (13). A number of studies indicate that people with psychiatric disabilities have fewer successful closures in the state–federal vocational rehabilitation system when compared to those with other disabilities (14–17). Although vocational programs for people with psychiatric disabilities can triple employment outcomes, the resulting 30–55% employment rates (10,11,18,19) indicate that the effect of such interventions still leave the majority of people with psychiatric disabilities unemployed.

SOCIAL SECURITY AND PEOPLE WITH PSYCHIATRIC DISABILITIES

Disability is defined by the Social Security Administration (SSA) as

... the inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of no less than 12 months. (Social Security Act, Section 223 (d) (1))

This statutory definition of disability applies to people in all impairment categories. Using this definition, people with psychiatric disabilities are proportionately one of the largest groups on the Social Security disability rolls. Of those who complete the application process and are awarded benefits, people with psychiatric disabilities comprise nearly 34% of all Supplemental Security Income (SSI) recipients and 27% of all Social Security Disability Insurance (SSDI) beneficiaries (20,21). Recent data also suggest that the number of individuals with psychiatric disabilities receiving benefits is increasing due to the large enrollment of children with disabilities in the last decade, two-thirds of whom are diagnosed with a psychiatric disorder. People with psychiatric disabilities also have the longest duration on benefits (22).

Recent estimates have reported little change in the numbers of people leaving the disability rolls because of "work recovery"—ranging from 0.5% for SSDI beneficiaries engaged in the state–federal VR system (23) to 3% of all new SSDI beneficiaries studied during a 1½-year period after entitlement in the early 1980s (24). Up to one-third of those who leave the rolls because of work recovery are reentitled to disability benefits, thus returning to the rolls. Hennessey (1996) reported in a New Beneficiary Follow-up study (a selected sample of those enrolled since 1972 followed for 9 years after entitlement) that approximately 12% of SSDI beneficiaries attempted work after entitlement, and 24% of those who attempted work terminated benefits because of either medical or work recovery. The chance of medical or work recovery decreases with each successive failed job attempt. Data were not available on the total percentage of DI beneficiaries in the study who left the rolls for working at what SSA calls substantial gainful activity (SGA) level (SGA is currently defined as earning \$740 or more per month). Information on type of disability is unknown for this group although Muller (1992) reported that people with psychiatric disabilities were less likely than any other group to leave the SSDI rolls because of employment, and if they left the rolls, they were more likely to reapply. Other studies suggest that a smaller

percentage of SSI recipients with psychiatric disorders leave the rolls because of excess income compared to those with other disabilities (22). Taken together, these data suggest that the unemployment and underemployment of persons with psychiatric disability poses a substantial concern for the SSA, the state–federal vocational rehabilitation programs, and other vocational programs that serve this population. Central to this issue is the fair and accurate determination of work capacity among individuals with psychiatric disabilities.

ASSESSMENT OF WORK FUNCTION AND PEOPLE WITH PSYCHIATRIC DISABILITIES

With employment rates low, a disproportionate number of people with psychiatric disabilities entering the SSA rolls, and the reduced likelihood of someone with a psychiatric disability returning to the work, it is essential to develop accurate tools for assessing and predicting the capacity to work. However, past approaches to assessment of work function and disability for people with psychiatric conditions have been problematic.

Early legislation that authorized the SSA's disability payment programs, SSDI and SSI, defined disability (Social Security Act, Section 223 (d) (1)) but did not specify how to determine it (25). Federal regulations were eventually adopted to implement a 5-step process called the Sequential Evaluation of Disability, which included the following steps:

1. Determine if applicant is working at SGA level (if yes, applicant is not eligible).
2. Assess the severity of the medical condition (if not severe, applicant is not eligible).
3. Compare medical condition to Listing of Impairments (if medical condition meets or equals the Listings, applicant is eligible, if not, move on to Step 4).
4. If applicant does not meet or equal the Listing of Impairments, conduct an assessment of residual functional capacity (RFC) to perform past work (if able to do past work, applicant is not eligible).
5. If not able to do past work, assess RFC for any job in the national economy considering age, education, and work experience, and if able to do any work, applicant is not eligible (25).

The Listing of Impairments is a set of signs, symptoms, and functional deficits (i.e., marked restriction of activities of daily living, constriction of interests, impaired ability to relate to others, deterioration in personal habits) deemed by SSA to be disabling (26). SSA developed a Psychiatric Review Form (PRF), which is a set of rating scales for the signs and symptoms to capture the information necessary for determining whether someone meets or equals the Listings in Step 3 of the Sequential Evaluation of Disability. This form was an attempt to use a standardized decision-making process in disability determination. However, the PRF focused at the impairment level, not on functional information. There was no provision for considering functional deficits remaining after treatment or variations in signs and symptoms over time (26). In addition, the validity of the PRF to predict work disability was called into question (26,27).

In Step 4, the assessment of RFC for mental impairments includes an assessment of the ability to understand, to carry out and remember instructions, and to respond appropriately to supervision and customary work pressures in a work setting (28). The Mental Residual Functional Capacity Assessment (MRFCA) form was developed by SSA to use in rating the mental RFCs based upon summary conclusions derived from medical and other evidence

in the file (SSA Form # SSA-4734-F4-SUP, 1985). The MRFCA form has 20 items in 4 categories: 1) understanding and memory, 2) sustained concentration and persistence, 3) social interaction, and 4) adaptation. While the Listings and RFCs were developed and revised through expert reviews of psychiatrists, psychologists, rehabilitation counselors, and vocational evaluators, there was little empirical evidence of the predictive validity for work disability of either method of assessment. In essence, this process focused on collecting medical information about the severity of the medical condition or impairment first, then assessing work functioning by reviewing the medical and other evidence in the file only when there was no clear-cut indication of a severe medical impairment.

Class action lawsuits brought against SSA in the 1980s due to the ambiguous disability determination process of individuals with psychiatric disabilities in particular (26) led to the Social Security Disability Act of 1984 which mandated that SSA assess vocational as well as medical factors to revise the criteria for assessing psychiatric disability using outside medical and mental health experts, and to make realistic assessments of the claimant's ability to engage in SSA in a competitive workplace environment (29). The Listings of Impairments were also revised to include more evidence of functioning, and assessments of RFCs were reinstated to include the capacity to 1) understand and remember job-related procedures or instructions; 2) get along with the public, coworkers, and peers and maintain appropriate social behaviors; 3) sustain concentration and persistence in order to complete a normal work day; and 4) adapt and be reasonably independent (25,29,30). These limitations in functioning had to be attributed to the psychiatric impairment. The SSA also developed guidelines for work evaluations performed outside the SSA office, including situational assessments, job tryouts, work samples, and other testing or combinations of these methods (29).

STUDIES OF THE DISABILITY DETERMINATION PROCESS

Several studies in the early 1990s examined the compatibility of the revised standards and guidelines for disability due to mental impairments with the statutory definition of disability. One such study, conducted by members of the American Psychiatric Association, evaluated how the medical standards and guidelines developed by SSA operationalized the definition of disability according to current thinking in psychiatry (31,32). Seventy-two psychiatrists were trained to apply only the legal definition of disability for adjudication or the legal definition plus the 1985 Listings of Impairments, the SSA Sequential Evaluation of Disability process, the Psychiatric Review, the MRFCA form, and medical evidence.

Psychiatrists reviewed claims in groups and individually, and completed a disability rating form developed for this study. They were also asked to rate the quality of the medical evidence and their confidence in the disability rating scores. Results indicated a high proportion of agreement in unambiguous claims. Unambiguous claims were those which had good medical evidence, high confidence ratings, and clear disability rating scores. Ambiguous or difficult claims were those with poor medical evidence and low confidence in the ratings of disability and midrange or marginal disability scores. Higher rates of agreement were associated with claims indicating organic, schizophrenic, or anxiety disorders, compared to affective and personality disorders (31). Those claims in which the disorder was episodic and where functioning fluctuated over time or were more complex, led to poorer agreement (32). Recommendations to SSA from this study included making refinements to the disability determination process using the standardized SSA forms, continuing to improve

the collection of medical and other evidence, developing comprehensive training manuals for clinical staff who review claims, and conducting systematic research on the Listings and Psychiatric Review Technique Form (31,32). Of interest is that no recommendation was made about the assessment of functioning contained in the MRFCA forms.

However, to this point no studies had examined the validity of the SSA disability determination process or forms in predicting actual work disability or work outcome. One study which did attempt to evaluate the capacity for work with people with psychiatric disabilities used measures of work performance in a simulated work environment, measures of gainful employment, and various structured assessments of diagnosis and symptoms (33,34). This study included individuals who were adjudicated disabled by SSA and those who were not, those diagnosed with psychotic disorders, those without psychotic disorders, and a group of controls without psychiatric disabilities. Results indicated that severity of psychopathology (psychosis vs. no psychosis) predicted work performance in the simulated work environment and that a measure of activities of daily living discriminated those who were disabled from those not disabled and predicted employment outcome but did not correlate with work performance in a simulated setting. One of two measures of social functioning predicted employment outcome and measures of work productivity predicted employment for 1 month but not employment for 3 months or longer.

Liberman and associates (33) concluded that their work performance index (i.e. the measure of work productivity) was an assessment of current work capacity and warned that it only could predict future employment if work capacity remained relatively stable and did not vary, as is often the case with psychiatric disabilities. Their findings did lend some support to the SSA inclusion in 1984 of assessments of ADLs and social functioning along with measures of psychiatric impairment in the disability determination process (Part B of the criteria in the revised 1985 Listings of Impairments), given that these measures were somewhat correlated with employment outcome.

There are several limitations in this important study. First, the work period studied was short, and could not adequately examine variation in functioning over time, which is often the hallmark of psychiatric disability. There was also a significant overlap in work performance among those who were adjudicated disabled by SSA vs. those who were not, so that the measure of work performance was not an accurate predictor of SSA disability status (34). And while higher symptom levels were associated with poorer work performance, symptom severity did not differentiate those who were adjudicated disabled from those who were not. The authors suggested further study, adding a work capacity evaluation to existing disability determination procedures, and the use of repeated and/or longitudinal assessments for those with recurrent conditions and/or fluctuating levels of impairment.

Studies would suggest that despite improvements in the SSA disability determination process over the past two decades, there remains significant ambiguity and inaccuracy for people with psychiatric disabilities.

PREDICTORS OF WORK FUNCTIONING FOR PEOPLE WITH PSYCHIATRIC DISABILITIES

Adding to the difficulties in assessing work function among individuals with a psychiatric disability is the question of whether and how well psychiatric diagnosis and symptoms (i.e. psychiatric impairment) can predict work capacity or functioning.

While the SSA disability determination process has moved toward incorporating measures of work functioning, there remains an overreliance on measures of impairment. For example, in their report on the analysis of functional assessment instruments for the disability determination process conducted by the SSA, Rucker *et al.* (1996) concluded that functional assessment instruments and methods can and should be an integral component of assessing work capacity. Unfortunately, their extensive search of the literature yielded a dearth of functional assessment instruments that have been adequately validated for individuals with disabilities, particularly individuals with psychiatric disabilities. From this examination of the literature, they concluded that while there are a large number of instruments currently in use, there are few adequate measures of functioning. Even while recommending the use of functional assessment instruments, Rucker and colleagues continue to suggest the use of impairment-specific tests for psychiatric disorders and clinical examination by a psychiatrist as a means of assessing work capacity of individuals with a psychiatric disability (35). The lack of adequate measures of functioning was recently confirmed by a Social Security-sponsored project which examined several thousand functional assessment instruments but found few suitable for predicting work function in persons with psychiatric disability (36–38).

A variety of early studies reported little relationship between future work performance and various assessments of psychiatric symptoms (39–43). From these studies, there appeared to be no symptoms or symptom patterns that were consistently related to work performance. A subsequent review of the literature by Anthony and Jansen on vocational capacity and outcomes for persons with psychiatric disability drew the following conclusions: psychiatric symptoms, diagnostic category, and standardized psychometric assessments (intelligence, aptitude, and personality tests) are poor predictors of future work performance; a person's ability to function in one environment is not predictive of his ability to function in a different type of environment; there is little or no correlation between a person's symptoms and functional skills; and the best clinical predictors of future work performance are ratings of a person's work adjustment skills made in a simulated work environment and the ability to get along or function socially. Finally, the best demographic predictor of future work performance is a person's prior employment history. More recent studies have found a modest relationship between psychiatric symptoms, work performance, and vocational outcomes, especially for those individuals considering vocational rehabilitation (44,45). For example, Massel and colleagues (1990) found that specific psychiatric symptoms were related to different measures of work performance, and that these outcomes varied by diagnostic category. In general, psychiatric diagnoses and symptoms tend to predict poorer outcomes. Coryell and colleagues conducted several long-term follow-up studies, which, taken together, suggest that psychotic-like features and symptoms were associated with poorer role functioning and less likelihood of being employed (46–50). Further, Gaebel and Peitzker (1987) found a significant association between symptoms and employment duration in their prospective study of persons diagnosed with schizophrenia. Rogers and her colleagues found a small but significant relationship between measures of symptoms and vocational outcomes among persons with psychiatric disabilities in work programs (51,52). Negative symptoms (e.g. withdrawal) were better predictors of vocational functioning than positive symptoms (e.g. hallucinations). It should be noted that in all of these studies, the relationship between psychiatric symptoms and vocational capacity or outcomes was modest and able to account for only a small proportion of the variance in vocational outcomes.

A recent review of studies published since 1985 validates the mixed results of symptoms or diagnosis predicting work outcome, but confirms that social skills, work history, and pre-morbid functioning are consistent predictors of work outcome for people with psychiatric disabilities (53).

Recent studies of employment interventions for persons with severe psychiatric disabilities found that a diagnosis of schizophrenia or other psychosis was related to poorer vocational outcomes (34,54,55). These and later studies typically used diagnoses based on the *DSM-III-R* or *DSM-IV* classification systems, which took functioning into account in determining the diagnosis (56,57). Fabian (1992), in a study of 90 persons in a supported employment program, found that having a diagnosis of schizophrenia was associated with poorer vocational outcomes. Similarly, Jacobs and colleagues (55) examined the effect of a job club intervention on 89 persons with severe psychiatric disability and found those with nonpsychotic diagnoses were more likely to find employment. Bell and Lysaker (1995) found that among a sample of male veterans diagnosed as schizophrenic or with schizoaffective disorder, symptoms had a “direct impact on work capacity.” Similarly, two other studies (58,59) found that diagnosis, specifically the presence of a major affective disorder, was a predictor of vocational outcome. Lysaker and colleagues (60,61) concluded from two separate studies that individuals with a diagnosis of schizophrenia performed less well than other individuals with disabilities in their social skills, work habits, personal presentation, and work quality.

Contrary to these findings, Harding and colleagues (1987) found that there were varying degrees of “productivity, social involvement, wellness, and competent functioning” among her sample of individuals diagnosed primarily with schizophrenia (62). These authors found no significant difference between subjects diagnosed with schizophrenia, and those not diagnosed with schizophrenia on several dimensions of the Strauss–Carpenter Levels of Function Scale, and no differences in employment status.

Similarly, despite the numerous studies suggesting that a diagnosis of affective disorder is generally associated with more positive outcomes than a diagnosis of psychosis, Dion *et al.* (1988) found that when persons with affective disorder who had experienced multiple hospitalizations were compared to persons with schizophrenia, their outcomes were not dissimilar.

Taken together, these studies do not support the conclusion that psychiatric diagnosis alone is a good predictor of vocational capacity. While there is sufficient evidence to suggest that a diagnosis of a psychotic disorder is associated with somewhat poorer vocational outcomes, these relationships appear modest. Similar conclusions can be drawn about symptoms. Psychiatric symptoms bear a small, but significant relationship to vocational functioning. Furthermore, most of the evidence we have thus far is correlational rather than causal in nature. Thus, the assumption that an assessment of symptoms can be a proxy measure for the assessment of vocational functioning, or that functioning is highly correlated to either psychiatric diagnosis or symptoms is not supported by the research thus far.

NATURE OF PSYCHIATRIC CONDITIONS

There are several characteristics of psychiatric disabilities that create difficulties in assessments of impairment and work functioning and may in part account for the modest relationships between diagnosis symptoms and vocational outcomes. Many psychiatric

disorders are episodic and recurrent; that is, exacerbations in symptoms and deterioration in functioning may recur several times over a period of months or years. However, some people experience only one episode of impairment and may return to premorbid functioning levels. Unfortunately, researchers and clinicians are unable to predict the course of illness and disability for one individual at any specific point in time. In addition, for those whose condition is episodic, it is difficult to predict when periods of exacerbation may occur. Thus, assessments performed in any "slice-in-time" may not be representative of that person's functioning over time. Indeed, Massel and colleagues' study on work capacity found that work evaluations may be better predictors of current work performance than future performance, particularly if the clinical status changes (33,34). Bell and Lysaker (1995) found that symptoms rated concurrently with work performance were better predictors than symptoms measured 3 or 13 weeks later.

There is also considerable variability within diagnostic groups in terms of the manifestation of the symptoms of the illness and limitations in functioning. Harding (1994) refers to this as the "hidden heterogeneity" in psychiatric disabilities. This may be one of the reasons that specific diagnosis is not highly correlated with vocational outcome. In addition, the reliability of psychiatric diagnosis has been poor although advances in the *DSM-III-R* (56), the *DSM-IV* (57) and related structured clinical interviews (63,64) have improved reliability recently. Interpretation of the results of studies correlating diagnosis with vocational outcome should be done cautiously, considering the source of the diagnosis.

There is also significant variability across diagnoses that are grouped under the SSA category of "mental impairments." These include various schizophrenia spectrum disorders; major depression and bipolar disorders among other affective disorders; schizo-affective disorders; obsessive-compulsive disorder and panic disorder among other anxiety disorders; borderline, antisocial, and other personality disorders; dissociative disorders; and numerous others. Studies on diagnosis or symptoms and work performance may involve only one specific diagnostic group, groups of diagnoses that may be categorized as psychotic or nonpsychotic, or unspecified psychiatric diagnoses grouped generically. In addition, in the past 20 years there have been slight modifications in the diagnostic nomenclature (56,57) that affect the comparability of studies using different versions of diagnoses in relationship to work outcomes. These issues create problems in generalizing findings from studies between and across diagnoses or to the entire category of mental impairments. Nonetheless, documentation of a psychiatric impairment relying on symptoms and diagnosis are pivotal in the disability determination process. Regulations require that any limitations in the ability to engage in substantial gainful activity be directly attributable to that impairment. What has been missing thus far has been a focus on establishing the link between the impairment and work disability.

The areas of functioning affected by psychiatric disabilities have been typically understood to be in the social/interpersonal, emotional, and cognitive domains (65-70). Emotional and interpersonal problems on the job, more than the quality of work, are the main reasons that people with psychiatric disabilities leave jobs (71-73).

Instruments measuring the social/interpersonal area of functioning may assess social status, role functioning, social adjustment, or interpersonal skills, and may be global or specific in nature (74-78). Recent literature on social skills has also defined a cognitive component to interpersonal interaction, such as in the receiving-processing-sending model of social skills (67,73) or in studies examining the relationship of social skills to

neuropsychological measures (79–82). While measures of specific interpersonal skills in a work setting are related to work outcome (45), a major limitation of most of these social functioning measures is that they have not been correlated with work outcome.

There are many measures of symptoms and mood states, but few that focus on emotional functioning vis-à-vis work. In many respects, the components of emotional functioning are the least well-defined and least understood compared to physical, cognitive, or even interpersonal functioning. Hodel and colleagues (1998) have recognized that people with schizophrenia and other psychoses lack skills in emotion recognition, emotion processing, regulation, and expression (83,84). Motivation and ability to experience pleasure are other emotion-related functions (83). However, there are no known measures of these skills nor their ability to predict vocational outcomes.

More recent literature has appeared on cognitive functioning, particularly related to people with diagnoses of schizophrenia. Measures of cognitive functioning include areas such as vigilance, secondary memory, verbal and visual memory, executive functioning, verbal fluency, and visuo-motor functioning (80–82). Instruments in this domain are more well-developed and psychometrically sound. In addition, recent studies have correlated some of these functions with vocational outcome. In a review of recent literature and meta-analysis, Green and colleagues (80,81) found that measures of secondary memory, immediate memory, vigilance, and executive functioning were significantly related to community outcome, which included social and occupational functioning and independent living. Visuo-spatial processing in particular was found to be related to increased work functioning (82). Verbal memory accounted for 20% of the variance in work performance in a vocational rehabilitation program using the Work Behavior Inventory (WBI), a situational assessment tool (85). Executive functioning as measured by the Wisconsin Card Sorting Test was related to amount of work performed in a vocational rehabilitation program (86). A global screening measure of cognitive functioning called the RBANS (Repeatable Battery for the Assessment of Neuropsychological Status) yielded significant differences between employed and unemployed participants on the total score ($p < 0.01$) and four of five index scores (immediate memory, attention and delayed memory indices, $p < 0.01$; language index, $p < 0.05$; visuo-spatial/constructional index, n.s.) (87).

To summarize, in the domains of social/interpersonal, emotional, and cognitive functioning, further study is needed to examine the relationships of these functions to vocational outcome. In particular, studies are needed on measures of these functions in people with various psychiatric diagnoses other than schizophrenia. Additional work with larger samples, various measures of the same functions, greater power, and larger effect sizes are needed, including studies of predictive validity for work outcome.

PROMISING ASSESSMENT METHODS

In the past two decades, several measures of work capacity have been developed and tested on individuals with psychiatric disabilities. These include a method of vocational evaluation known as situational assessment. Situational assessment techniques involve direct observations of a person in a real or simulated work environment and use of behavioral rating scales to assess skill performance over a period of time. These behaviors are known as general work skills or work adjustment skills. For people with psychiatric disabilities, these skills tend to be in the interpersonal and cognitive domains. A number of studies have

highlighted the relevance and usefulness of situational assessment techniques for people with psychiatric disabilities (13,88,89). One study found that individuals who had participated in situational assessments had better vocational outcomes in the state–federal vocational rehabilitation system (13). Several have also suggested that situational assessment is the best method to determine vocational potential for people with psychiatric disabilities (27,88–90).

The Standardized Assessment of Work Behaviour (SAWB) (91–93) assesses a broad range of behaviors (e.g. uses tools/equipment, communicates spontaneously, grasps instructions quickly). The 25 behavioral items are rated on a 5-point continuum, from strength (e.g. looks for more work) to deficit (e.g. waits to be given work) based upon observed work behavior over the past 10 days. Inter-rater and test-retest reliabilities were good ($r = 0.80$, $p < 0.005$; $r = 0.75$, $p < 0.001$ respectively), and the scale was able to successfully discriminate between those employed and those unemployed after discharge from the program. Using factor analysis, the 25 items yielded five factors: task competence, attitude to authority and supervision, social relationships, work enthusiasm/motivation, and confidence/initiative (91). Of interest is that supervisors' work ratings and the individuals' self-ratings were not correlated with one another, with those doing manual work and people with schizophrenia diagnoses overestimating their performance compared to the supervisors' ratings (94).

Rogers and colleagues developed the Work Adjustment and Interpersonal Skills Scales and situational assessment procedures (95,96) based on evidence that situational assessments yield more valid measures of work capacity than clinical or paper-and-pencil assessments. The instrument contains two separate scales consisting of 21 work adjustment skills and 14 interpersonal skills. Each item is rated on a behaviorally anchored rating scale based on observation of the person in a preferred work environment. Inter-rater reliabilities were high for each scale ($r = 0.82$, $p < 0.001$ for work adjustment skills and $r = 0.75$, $p < 0.001$ for interpersonal skills). Internal consistency was also high for each scale ($\alpha = 0.98$ for work adjustment and 0.97 for interpersonal skills) as was test-retest reliability ($r = 0.98$ and 0.97 respectively). While reliability was good, the sample was too homogeneous (too few people obtained employment) to determine predictive validity for employment during a 1-year follow-up. Concurrent validity with the Griffiths' SAWB scale was adequate. Further study with a more heterogeneous group is recommended to determine predictive and discriminant validity.

The Job Performance Evaluation Form (97) is a 25-item checklist of behavioral items in four categories: Work Readiness (e.g. attendance, grooming), Work Attitudes (e.g. accepts responsibility, flexibility), Interpersonal Relations (e.g. cooperation and rapport with coworkers), and Work Quality and Performance (e.g. follows directions, accuracy). In an earlier study on the predictive validity of this scale using a modified version of this form (The Thresholds Monthly Work Evaluation Form), each item is rated on a 5-point scale ranging from unsatisfactory to outstanding (90). Clubhouse members were observed in a sheltered prevocational work crew or in a transitional employment job in the community. Internal consistency for the subscales ranged from 0.74 to 0.93, and test-retest reliability was satisfactory. At follow-up 15 months later, results indicated that the total scale score discriminated between those competitively employed and those unemployed. Predictive validity coefficients of 0.54 were obtained with weeks worked in paid employment over 6 months and also with total earnings. Those evaluated in sheltered prevocational settings were rated lower in work performance than those evaluated in a community transitional employment job (90).

The WBI is a 36-item work performance assessment instrument specifically designed for people with severe mental illness (61,98). This measure is intended for use in a real work situation and consists of five subscales: Work Habits, Work Quality, Personal Presentation, Cooperativeness, and Social Skills. Items are rated on a 5-point scale from consistently inferior to consistently superior. Reliability was acceptable, with internal consistency coefficient alphas of 0.85–0.95 for the factors on this scale, and inter-rater reliability intraclass correlations ranging from 0.88 to 0.94 (61). The WBI was shown to predict hours worked and money earned, as well as discriminating between those who worked post-program from those who did not (99).

Of interest is that most of these situational assessment instruments have items that are related to items on the MRFCAs form (MRFCA; SSA Form # SSA-4734-F4-SUP), specifically items measuring ability to 1) understand and remember job-related procedures or instructions; 2) get along with the public, coworkers, and peers and maintain appropriate social behaviors; 3) sustain concentration and persistence in order to complete a normal work day; and 4) adapt to new situations. Constructs on the MRFCAs have been further validated by expert opinion and review, and further elaborated upon in a Social Security study of functional assessment, as mentioned earlier. That project (36) was designed to evaluate current functional assessment instruments and to develop a comprehensive taxonomy of functional categories that must be assessed in relation to work. Using a panel of experts, a total of five domains of functioning were identified (Sensory–Perceptual, Physical, Cognitive–Intellectual, Interpersonal–Emotional, Vocational Behavior) further branching into 33 conceptual factors and a total of 131 functional assessment constructs (see Gaudino, 2001, this issue for additional details). Factors such as Attention/Concentration, Interpersonal Interactions, Planning and Organizing Work, Behavior Modulation, and Tolerance for Distracters, are very similar to the MRFCAs assessment areas. One of the problems with the MRFCAs form, however, aside from the lack of evidence of predictive validity for work disability, is that it is completed by psychiatrists and other disability determination staff based on the medical and other evidence in the file, with no direct observation of the claimant in a work setting, unlike situational assessment approaches.

Unfortunately, none of these situational assessment measures has been widely adopted. Perhaps they are seen as too costly to use (at least in the short term), too labor intensive, and unwieldy to arrange, requiring vocationally skilled staff and work environments in which to observe those being assessed. In fact, the original SSA “Plan for a New Disability Claims Process” (100) proposed that the process for determining disability focus on assessing functioning directly with standardized instruments of proven reliability and validity, which must also be feasible and cost-effective. At least one study (101) would suggest that situational assessment procedures may be valid with very short observation periods which could render them cost effective. However, the use of situational assessment approaches for ratings of interpersonal and work adjustment skills have not been formally studied by the SSA. Additional research is needed to determine the optimal length of assessment, predictive validity, and procedural costs or savings to consider using situational assessment methods.

CONCLUSIONS AND IMPLICATIONS

While considerable progress has been made in the assessment of factors related to work outcomes for persons with psychiatric disability over the past three decades, assessments of work functioning in the disability determination process continue to be fraught

with methodological problems. The most important is that psychiatric symptoms and impairment, while necessary to establish the presence of a medical impairment, often continue to be the focus of the Social Security disability determination process even though research has not demonstrated the validity of this approach. There are no global, self-report, clinical, or traditional measures of work functioning that can account for a major portion of the variance in vocational functioning for this population. Situational assessment approaches hold promise for the evaluation of work functioning, but are often more time-consuming, resource intensive, and logistically difficult to arrange because of the need for a real or simulated work setting in which to conduct the assessment. Furthermore, none of the approaches or measures described in this paper, including the situation-based measures, sufficiently addresses the issue of the day-to-day fluctuations in functioning or the hidden heterogeneity that are characteristic of psychiatric disability.

Mental health researchers, clinicians, and evaluators continue to need reliable and valid measures of work functioning. Research studies are needed to psychometrically test existing and new measures of work capacity. For example, research studies should be undertaken to assess the reliability and validity of the SSA's MRFC form and procedures for assessing the RFCs for mental impairments. Additional studies of promising situational assessment methods are also needed.

There are many design challenges inherent in the study of measures of work function. For example, longitudinal studies are often needed to examine predictive validity and later work function, but such studies are time-consuming, labor-intensive, and subject loss to follow-up is a real concern. The other major design consideration is what population or populations to sample for such studies. Including individuals who have been adjudicated as disabled by the SSA is problematic, because of the very small minority who returns to work. Studying new Social Security claimants may hold promise but would require the long-term follow-up of those adjudicated as disabled and those not so adjudicated. Finding individuals who have experienced a work disability due to psychiatric impairments and who have not accessed public mental health services or federal income support programs might shed light on these issues, but is a considerable challenge.

Given the large number of individuals with psychiatric disabilities on the Social Security and VR rolls and the fact that few leave the rolls for employment, accurate assessment of work capacity and disability is critical. Current "slice-in-time" assessment techniques do not adequately consider several crucial characteristics of psychiatric disabilities that play a role in work capacity: the episodic and unpredictable nature of most psychiatric disabilities, the variations in functioning over time both within and across individuals, and variations in the expression of psychiatric disabilities across individuals with the same diagnosis. There is a lack of agreement among evaluators, clinicians, and researchers about the essential domains of functioning that are critical to assess for this varied population, especially regarding the relative importance of assessing clinical factors (e.g. symptoms, diagnosis, and mental status needed to establish the medical impairment) vs. functional factors (e.g. social skills, cognitive functions, and emotional behaviors needed to determine severe problems in functioning) in determining disability.

The Kennedy and Pincus studies (31,32,102) of the Social Security disability determination process strongly suggest that a structured approach to the determination of work functioning is better than an unstructured approach, and that assessment of RFC (using the MRFC form and the PRF) hold promise for producing more valid and reliable ratings of

work disability. Such studies need to be expanded and replicated in the future so as to improve the disability determination process for persons with psychiatric disability, especially regarding the assessment of functioning and predictive validity for work disability. Validation of the MRFCFA and PRF forms used by SSA for prediction of work disability seems to be a necessary and crucial step in future research. Validation of other instruments measuring functioning, especially those using behavioral rating scales and situational methodologies, are also indicated by the current research literature. Given that the past 20 years of disability determination has been problematic for persons with psychiatric impairments, it is imperative that we work to insure that the process for this population is at least as accurate and fair as for other groups of individuals with disabilities.

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