

**PSYCHOSOCIAL TREATMENTS
For SCHIZOPHRENIA**

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Stressors like major life events and high expressed emotion in family and residential settings can adversely affect the course of schizophrenia when individuals vulnerable to the disorder are exposed to the stressors without the protection of medication, psychosocial treatment, and natural coping ability and social support. This being so, it is not surprising that the empirical data on treatment outcomes support a biopsychosocial view of treatment for schizophrenia, including medication, psychosocial treatments, and social support.

Five Type 1 and literally hundreds of Type 3 studies of behavior therapy and social learning/token economy programs support the value of treatments that structure, support, and reinforce prosocial behaviors in treatment-refractory persons with schizophrenia.

Several Type 1 randomized clinical trials (RCTs) using structured, educational family interventions have shown the superiority of adding family intervention to medication and customary case management for persons with schizophrenia.

More than 40 Type 1 or Type 2 RCTs support the efficacy of social skills training to enable persons with schizophrenia to acquire instrumental and affiliative skills to improve functioning in their communities.

OVERVIEW OF SCHIZOPHRENIA

Diagnosis

Schizophrenia, the most disabling of the major mental disorders, is characterized by two or more of the following: (a) delusions, (b) hallucinations, (c) disorganized speech, (d) grossly disorganized or catatonic behavior, and (e) negative symptoms. These symptoms must impair social and occupational functioning and be continuously present for at least 6 months. Since other disorders, some with known etiologies, can mimic schizophrenia, before making the diagnosis it is necessary to exclude psychoses resulting from substance

abuse, medical conditions that affect the brain (e.g., tumors, Cushing's disease), pervasive developmental disorders, and mood disorders (e.g., bipolar disorder or psychotic depression). In this chapter reviewing the psychological and behavioral treatments for schizophrenia, we include schizoaffective disorder with schizophrenia since the two have very similar clinical features, prognoses, and responses to treatments. Because schizophrenia spectrum disorders are almost always treated with antipsychotic drugs, an inventory, evaluation, and interpretation of the literature on psychological and behavioral treatments must view the treatments as biobehavioral, that is, multidimensional therapies with pharmacological and psychosocial components.

Etiology and Course of Illness

While there is no definitive evidence identifying one or more causal factors in the etiology of schizophrenia, most authorities would view the extraordinary heterogeneity in psychopathology, psychosocial functioning, and course of illness in this disorder as indicating that our current ignorance of central nervous system functioning masks the likelihood that there is more than one etiology in what we see as the final common pathway of psychosis. There is sufficient data from family and adoptive studies to suggest that genetic factors may account for approximately 60% of the etiology of schizophrenia and that schizotypal personality traits may be the genetically determined phenotype (Raine, Lencz, & Mednick, 1995). Strong evidence also supports the role of socioenvironmental factors in influencing the course of the disorder. In particular, early identification and diagnosis followed by appropriate and continuous biopsychosocial treatment has been shown to improve the long-term outcomes of persons with schizophrenia (Wyatt, 1991, 1995).

The onset of schizophrenia typically occurs during adolescence and early adulthood; however, a tiny minority of cases begin during childhood. The disorder affects males and females equally, but males are disproportionately represented in treatment facilities, presumably because their illness-linked behavior and functioning become more visible and intolerable to families and society. The onset of the disorder is about 5 years later for females (late 20s) than males (early 20s), most likely because female hormones serve a protective function against abnormalities in neurotransmitter systems (Seeman, 1982).

The long-term course of the disorder can be divided into three groupings, although accessibility to and use of comprehensive, high-quality, continuous treatment will determine the proportion of individuals with schizophrenia in each group. One type of course is marked by one or more psychotic episodes with relatively rapid return to premorbid functioning and good prospects for recovery. The second and most common course followed by schizophrenic patients is characterized by many years of intercurrent acute psychotic relapses or exacerbations, with periods of full or partial remission and varying degrees of residual impairments in functioning. A final group of about 15% of individuals with schizophrenia fail to respond

to currently available treatments and demonstrate the third form of the disorder, with prolonged and persistent psychotic symptoms with moderate-to-severe personal and social disabilities. The proportion of individuals with treatment-refractory schizophrenia is gradually diminishing with the advent of such novel, atypical antipsychotic drugs as clozapine.

Evidence from several countries documents that over 50% of individuals with well-diagnosed and severe forms of schizophrenia can achieve good states of remission and psychosocial functioning 20–30 years after their initial periods of illness (Harding, Zubin, & Strauss, 1992). A key element in recovery requires the patient and practitioner(s) to forge an informed partnership in which the patient is not a passive recipient of treatment but is an active participant in managing symptoms, preventing or containing relapses, and pursuing long-term social, personal, and occupational goals with abundant social support and training of skills (Lieberman et al., 1993).

The course of schizophrenia can be complicated and adversely affected by concurrent abuse of alcohol, stimulant drugs (cocaine, amphetamines), or marijuana. These agents are all well documented as stressors in the exacerbation of psychosis in individuals vulnerable to schizophrenia. The financial cost to a family with a relative who has severe mental illness (e.g., schizophrenia) and concurrent substance abuse is significantly greater than the costs to families of a relative with mental illness alone; the annual costs were \$13,891 per family versus \$3,547 per family, respectively (Clark, 1994).

It is often difficult to diagnose a dually diagnosed person as having schizophrenia until the presence of the offending substance has cleared the body. Even then, as in amphetamine psychosis, recurrent psychotic symptoms may be manifested many months after the last use of the amphetamine. The prevailing view of comorbid substance abuse in schizophrenia that patients are attempting to self-medicate their depression or positive or negative symptoms is not borne out by the facts. Substances of abuse exacerbate, rather than ameliorate, psychiatric symptoms (Shaner et al., 1995). Treatment of comorbid schizophrenia and substance abuse requires a coordinated and integrated approach, adapting methods from the substance abuse field (e.g., urine checks, self-help groups) so they will properly fit the schizophrenic individual. It is widely believed that it is essential to integrate all components

of treatment of the dually diagnosed substance-abusing person with schizophrenia "under the same roof," with the psychiatric treatment team offering and coordinating the array of modalities aimed at the psychosis and the substance abuse (Roberts, Shaner, Eckman, Tucker, & Vacarro, 1992).

Other factors complicating the treatment and outcome of schizophrenia are comorbidity with developmental disabilities (e.g., schizophrenic symptoms developing in adolescence in an individual who has had autism since birth), comorbidity with depression (commonly present and a risk factor for suicidality), and homelessness (which presents a challenge to engaging and maintaining the individual in treatment).

Environments that are high in stress—either through hostility or criticism of the person with schizophrenia or emotional overinvolvement ("high expressed emotion")—have been shown in replicated, international studies to carry a significantly higher risk of relapse in individuals with schizophrenia. Since the source of stressful social environments comes from caregivers' lack of education about the nature and proper treatment of schizophrenia, combined with the challenging and burdensome symptoms and disability exhibited by the person with schizophrenia, treatment techniques (see below, "Structured Family Interventions") have been designed and validated to improve the emotional climate in relationships that the patient has with significant others in his or her living environment. Improvements in the family emotional climate have resulted in reduced relapse rates.

Consensus among authorities in the field supports an explanatory and heuristic model of the etiology, course, and outcome of schizophrenia that incorporates *vulnerability*, *stress*, and *protective factors* (Nuechterlein et al., 1994). Vulnerability factors (e.g., genes, neurodevelopmental anomalies, abnormalities in brain neural networks and neurotransmitter systems) are relatively enduring abnormalities of individuals at risk for schizophrenia that are present before, during, and after psychotic episodes. Stressors include role expectations, daily hassles, and major life events that demand adaptive changes from the individual, challenge the individual's coping abilities, and sometimes serve as triggers for psychotic episodes (e.g., drugs of abuse, high stress in the patient's living environment, major life events, and even toxic side effects of antipsychotic medications). Personal and environmental protective factors (e.g., social skills, family sup-

port, judicious types and doses of antipsychotic medication embedded in comprehensive and continuous treatment services) allow a vulnerable individual to buffer the deleterious effects of stressors superimposed on vulnerability and avoid or mitigate relapse.

Prevalence and Cost

Based on epidemiological studies, there are 2 million persons in the United States afflicted with schizophrenia or schizoaffective disorder, representing 1.1% of the population (Regier, Farmer, Lock, Keith, & Rae, 1993). There are over 300,000 acute episodes of schizophrenia annually in the United States, and the economic cost of this disorder to the nation, in terms of treatment and lost income, is more than \$30 billion per year (National Institute of Mental Health [NIMH], 1995). The lifetime loss of income for a male diagnosed as having schizophrenia late in adolescence has been calculated to be \$1,027,000 (Wyatt & Clark, 1987). An estimated 100,000 hospital beds on any given day are used by persons having schizophrenia (Talbot, Goldman, & Ross, 1987).

An additional cost to society comes from the involvement of the law enforcement and correctional systems in providing crisis intervention and long-term institutionalization for persons with schizophrenia who commit criminal offenses. The lifetime prevalence of schizophrenia among prisoners in correctional facilities is 6.2% (Regier et al., 1990), and few of these prisoners receive appropriate treatment. In California, it costs over \$20,000 per year to maintain each of its 25,000 mentally ill prisoners with only custodial services. State psychiatric hospitals can spend over \$100,000 per year on services for a person with schizophrenia.

Schizophrenia not only carries the risk of substantial morbidity, it also has a risk of mortality. Approximately 25% of persons with schizophrenia attempt suicide and 10% succeed (Roy, 1992). Suicidality in schizophrenia is associated with being male, having fallen from a much higher premorbid level of functioning, and experiencing depression (Caldwell & Gottesman, 1990). There is a high level of comorbidity of depression with schizophrenia (Green, Nuechterlein, Ventura, & Mintz, 1990; Kessler et al., 1994).

Approximately one third of the homeless population in the United States suffers from schizophrenia, and many of these people also have a substance abuse

disorder (Koegel, Burnam, & Farr, 1988). The number of persons with schizophrenia and other serious mental disorders joining the ranks of the disabled with Social Security pensions has risen dramatically, by 66.4%, since 1986 (Manderscheid & Sonnenschein, 1992); few of the mentally disabled ever return to work and achieve functional independence. Thus, they are a burden to society and to their families for their lifetimes.

HISTORICAL PERSPECTIVE AND SCOPE OF LITERATURE

Empirical studies of psychological and behavioral treatments for schizophrenia were first conducted in the late 1950s and early 1960s by former students of B. F. Skinner who obtained positions in psychiatric hospitals. Lindsley, Ferster, Ayllon, and Azrin published single-case controlled studies and laboratory analogues of treatment, showing clearly that environmental antecedents and consequences could powerfully influence psychotic behaviors (Lieberman, 1976). These investigators documented that presentation of reinforcement produced increases in desirable, adaptive behavior and withdrawal of reinforcement produced decreases in that behavior. By the mid-1960s, Ayllon and Azrin had established the first token economy, the application of reinforcement principles to an entire ward of patients (Ayllon & Azrin, 1965). A book reviewing the first 10 years of behavior modification includes work done with mute and withdrawn psychotics, autistic children, the developmentally disabled, and patients with bizarre behaviors (Ullman & Krasner, 1975).

The original studies were carried out with "hopeless" and treatment-refractory patients who had failed to respond to antipsychotic medications. The back wards of psychiatric hospitals were hospitable to the pioneers of behavior therapy for schizophrenia because resistance was not as strong as in treatment settings in which clinicians had vested interests in more traditional therapies such as psychodynamic approaches. From 1968 to 1975, there was an exponential increase in publications devoted to the token economy and other behavior therapy approaches to individuals with chronic forms of schizophrenia (Lieberman, 1976). Behavioral approaches were conducive to the growing scientific norm in psychiatry, fertilized

by the empiricism of psychopharmacology. Adherents of both behavior therapy and psychopharmacology relied on empiricism to document the value of their interventions; in addition, for patients who did not respond optimally to psychopharmacology, behavior therapy offered both symptomatic and rehabilitative treatments (Lieberman, Kopelowicz, & Young, 1994). These studies were Type 3, using the criteria of this book, pinpointing and measuring specific, molecular, and aberrant behaviors to modify and utilizing A-B or case control designs. They were heuristic, however, in stimulating further work that would become more rigorous and methodologically substantial.

In the early 1970s, the second generation of behaviorally oriented clinicians and researchers began to publish the results of their work with persons having schizophrenia (Fichter, Wallace, & Liberman 1976; Liberman, King, & DeRisi, 1976; Liberman, Teigen, Patterson, & Baker, 1973; Paul & Lentz, 1977). The second-generation studies focused more on strengthening prosocial behaviors rather than eliminating or weakening bizarre behaviors. Some of the most disastrous effects of long-term institutionalization of persons with schizophrenia were the constriction of interpersonal responses and withdrawal from social interaction. The "good" patient in a custodial setting was quiet and unobtrusive. Enhancing the social repertoires of such patients was vital to their becoming capable of leaving the hospital and adjusting to life in the community. Competence in carrying on conversations, asking for directions, obtaining necessities, and, in general, navigating the social pathways were prerequisites for successful re-entry and tenure in the community. The investigators who carried out the studies of the 1970s also recognized the limitations of generalization of treatment when the treatment was conducted solely in hospitals without planning for the "transfer of training" into the community (Lieberman, McCann, & Wallace, 1976).

In their landmark controlled study comparing behavior therapy with milieu and custodial therapies, Paul and Lentz (1977) prepared patients for community life by having case managers visit the cities and towns to which the improved patients would be discharged to create opportunities and encouragement for the patients to continue to utilize their treatment gains by using "natural reinforcers" and caregivers. Not only did patients, who were randomly assigned to the social learning program, show greater clinical

improvement in all areas measured, but they also had a 98% discharge rate and significantly longer tenure in the community after discharge.

The use of social skills training, developed and validated by Liberman and his colleagues (Liberman, DeRisi, & Mueser, 1989; Liberman, King, DeRisi, & McCann, 1975; Wallace & Liberman, 1985), also was a step in the direction of improved generalization (Benton & Schroeder, 1990). Social skills training utilizes the full array of social learning and behavioral principles to bring about better verbal and nonverbal social interaction. Because social skills training can be performed in any treatment setting—including naturalistic community locales—it has become a treatment of choice in the 1990s for persons with schizophrenia. Skills training fits into the “vulnerability-stress-protective factors” model of schizophrenia, which has become the most favored explanation of the etiology and course of schizophrenia. Skills training has been effective in reducing relapse rates (Fallon et al., 1985; Hogarty et al., 1986; 1991), improving social functioning (Liberman, Mueser, & Wallace, 1986; Marder et al., 1996), and enhancing quality of life (Marder et al., 1996).

The literature on the treatment and rehabilitation of persons with schizophrenia is enormous, appearing in literally hundreds of journals devoted to psychiatry, clinical psychology, behavior therapy, psychosocial rehabilitation, vocational rehabilitation, as well as journals dedicated to this disorder (*Schizophrenia Bulletin*, *Schizophrenia Research*). Books devoted to schizophrenia could fill a moderate-size library. Rather than aim for an exhaustive review of the entire literature of the past decade, which would be an undertaking well beyond the scope of this chapter, we have drawn from review articles, selected books, and issues of the *Schizophrenia Bulletin*.

STATUS OF TREATMENTS

The prevailing “stress-vulnerability-protective factors” model of schizophrenia helps the clinician understand the etiology, course, and treatment of this life-long disorder. Stressors, such as major life events and high expressed emotion in family and residential settings (Snyder, Wallace, Moe, & Liberman, 1994), can adversely affect the course of the disorder when individuals with vulnerability to the characteristic

symptoms and associated disabilities of the disorder (Liberman, Wallace, Vaughn, Snyder, & Rust, 1980) are exposed to the stressors without the protection of medication, psychosocial treatment, and natural coping ability and social support (Kopelowicz & Liberman, 1995). For veteran practitioners who have long considered only biological treatments as effective in protecting schizophrenic individuals from stress-induced relapse and disability, this chapter and the evidence that supports the protective value of psychosocial treatments (Wunderlich, Wiedemann, & Buchkremer, 1996) may serve as an antidote to the insidious biological reductionism that often characterizes the field of schizophrenia research and treatment. On the other hand, it is essential to view treatments of schizophrenia in their biopsychosocial matrix—leaving out any of the three components (bio, psycho, social) will diminish the impact and efficacy of treatment.

In this review of the extant treatments for schizophrenia, we use a multilevel and multidimensional set of criteria in rating the evidence that supports each of the treatments. While few studies incorporate a multilevel approach, the field is moving rapidly to an appreciation of the value of a comprehensive assessment of outcome, measuring changes in (a) symptoms, bizarre and intolerable behaviors, and relapse rates (psychopathology); (b) deficits in activities of community living, social competence, and social adjustment (social and instrumental role functioning); (c) self-management of illness, including medication adherence, avoiding drugs of abuse, identifying prodromal signs of relapse, and coping with persistent symptoms (illness self-management); (d) burden of the disorder on the family or other caregivers in daily contact with the patient (care burden); and (e) subjective quality of life in areas of finances, medical and psychiatric care, recreational and social activities, family life, spiritual life, work or school, and overall perceived quality of life. A multidimensional approach to the evaluation of outcome in the psychosocial or behavioral treatment of persons with schizophrenia and other disabling mental disorders is much “easier said than done” and is plagued with methodological complications. For example, multiple employment measures may be required in studying vocational rehabilitation for persons with mental disorders to properly capture the degree of independent and instrumental role functioning in a job (sheltered v. volunteer v. transitional v. supported v. competitive) and the dura-

tion, mobility, salary level, and satisfaction of the consumer and employer with the job performed (Bond & Boyer, 1988).

Similarly, multiple measures offer advantages in assessing the comprehensiveness of behavior that comprises the construct of social skills (Lieberman, 1982). The efficacy of supported education or supported employment services may be reflected by changes in self-concept, subsequent vocational attainment, as well as educational accomplishments. Because schizophrenia is a lifelong disorder requiring lifelong services, it is not possible in a time-limited study to identify longitudinal outcomes that may be sequentially linked to a particular treatment; for instance, improvement in social skills at Time A may not have evident impact on the individual's social and community functioning at Time B because opportunities, encouragement, and reinforcement for using the learned skills only emerge in the person's environment at Time C many months or years later—well after the study's assessment has been completed.

There are methodological challenges to the use of a multidimensional approach to measuring change wrought by behavioral and psychosocial treatments as well. For example, since assessment measures do not typically include ethnically based response sets, differences in language, linguistic nuances, and translation of items from standardized assessments may create aberrant response patterns (Sue & Sue, 1987). Certain goals for minority clients may not be isomorphic with the rehabilitation goals of the majority population; for example, independent living status may have less relevance to clients from backgrounds of poverty (who cannot afford independent housing) or from backgrounds with extended kin networks and co-residence traditions (Cook & Pickett, 1994). Moreover, rehabilitation services may be delivered to minorities by practitioners from different racial and ethnic backgrounds who do not fully understand or positively relate with the client. Outcomes from a poor client-practitioner match may be suboptimal.

In any evaluative review of psychosocial treatment of schizophrenia, therefore, it is difficult to know whether good or poor outcomes derive from problems in measurement, the nature of the treatment itself, the failure of the treatment to hew faithfully to the proper model of service delivery, the failure to provide sufficient amounts of the treatment, or the fact that the client did not receive the proper combination of

services linked to their phase or stage of illness. In summary, "the field of psychiatric treatment and rehabilitation of schizophrenia may have outstripped its evaluation counterpart, so that the growth of multidimensional models has occurred without accompanying ways to measure their effectiveness" (Cook, 1995, p. 4).

In addition to the importance of a multidimensional approach to validating the efficacy of treatments, it is also desirable to ensure that a particular treatment is, in fact, appropriate for the phase or stage of an individual's disorder. For example, higher doses of antipsychotic medication may be required for the acute, florid phase of illness, but lower doses usually provide a higher benefit/risk ratio for those in the maintenance or recovery phases. Similarly, while social skills training is utilitarian and of tangible benefit to persons in the reconstituting, maintenance, and recovery phases, patients in the acute stage of schizophrenia may not have the cognitive capacity to learn social skills—their distractibility and overarousal may, in fact, be adversely affected by the demands of a classroom-type learning environment. The multidimensional approach to treatment evaluation, the complex cube of psychiatric rehabilitation, is depicted in Figure 9.1.

While a multidimensional approach to evaluating the efficacy of treatments is only beginning to influence the work of treatment researchers, we endeavor to rate each treatment for schizophrenia in terms of those dimensions that have been shown to improve with the respective treatment. It is also necessary to place modalities of treatment—whether they are pharmacological or psychosocial—in the context of a system of mental health delivery. The various modalities that have been documented as efficacious in schizophrenia need to be organized, financed, and delivered by an agency or group of mental health practitioners that serve as a fixed point of responsibility. The treatments must be appropriately linked to the phase or stage of a person's disorder and must be coordinated, comprehensive, continuous, and integrated. Very few persons with schizophrenia can be adequately treated in an outpatient office practice by a single practitioner.

Thus, the pervasive deficits and requirements for linkage to multiple human service agencies require a team approach, which is best exemplified by the model of assertive community treatment developed and disseminated by Stein and Test and their col-

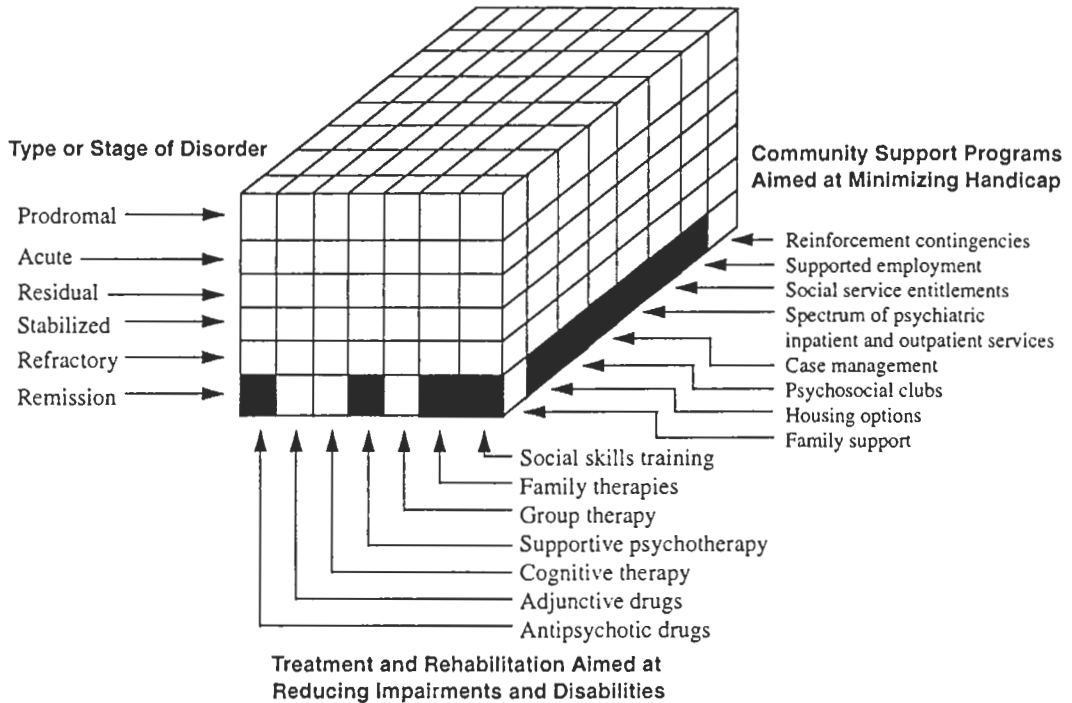


FIGURE 9.1. The complex cube of psychiatric rehabilitation reflects the three major dimensions of treatment planning and implementation. The specific modalities of assessment and intervention are displayed along the horizontal axis and keyed to the phase or stage of the individual's disorder. Whatever the array of specific treatment modalities indicated for an individual, a treatment delivery system and social support program (e.g., housing, case management, entitlements and benefits) must be available if the treatments are to make an impact. In the particular graphic shown, an individual with schizophrenia that is in clinical remission is receiving maintenance antipsychotic medication, supportive psychotherapy (e.g., from a case manager), family intervention, and social skills training. A large number of social support services are concurrently being provided to this individual, as shown in the axis moving into the background of the figure.

leagues in Madison, Wisconsin (Stein & Test, 1985; Test, 1992). Thus, after the relatively demarcated treatment modalities for schizophrenia are rated, we include a section on the system of mental health delivery, focusing on models of agency-based treatment teams and case management.

Almost all of the available treatment research literature is about "efficacy," not "effectiveness." That is, efficacy is evaluated in highly controlled clinical research studies that are conducted in specialized research settings, supervised by academic personnel, and often working with the aid of grant support. There are precious few studies of effectiveness, in which the treatments under evaluation are being carried out in ordinary clinical service systems by practitioners who may or may not demonstrate fidelity to the treatment

parameters. Effectiveness is evaluated in mental health services research for which the use of carefully diagnosed populations and inflexible treatment manuals derived from clinical research is not always possible or desirable (Fensterheim & Raw, 1996).

One example of this is in the use of antipsychotic drugs. Clinical research demonstrates clearly the lack of efficacy of polypharmacy and the hazards of using high doses. When examining the practice of prescribing neuroleptic drugs in ordinary hospital and community settings, one discovers widespread polypharmacy and higher doses than desirable. Mental health services research is only in its infancy; thus, we rate treatments primarily in terms of their documented efficacy, not their effectiveness. When effectiveness evidence is available, we document it in our ratings

Individual and Group Therapy

Traditional psychodynamically oriented individual and group psychotherapy have not been shown to be efficacious in schizophrenia; in fact, there is evidence that suggests an adverse effect of this form of psychotherapy on some persons with schizophrenia, presumably those with limited information-processing capacities (Mueser & Berenbaum, 1990). However, the supportive qualities inherent in treatment relationships of all types (e.g., with prescribing psychiatrist, nursing staff on an inpatient unit, case manager) are a necessary but not sufficient basis for delivering all types of treatments and for therapeutic change (Frank & Gunderson, 1990). In the past few decades, individual and group therapies for persons with schizophrenia have evolved from being informed by psychoanalytic theories and techniques to being inseminated by more supportive, practical, active, and personally reciprocal qualities. These qualities of the therapeutic alliance are delineated next in the supportive therapy treatment category.

Supportive Therapy

Supportive therapy—individual, family, and group—is characterized by

- A positive, therapeutic alliance and relationship
- A focus on reality issues, solving problems in everyday life, and practical advice
- An active, directive role by the therapist, who uses his or her own life experiences and self-disclosure as a role model for the patient
- Encouragement and education of the patient and family for proper use of antipsychotic medication.

While supportive forms of individual therapy have been broadly applied by practitioners in the course of delivering pharmacotherapy or more specific psychosocial services to persons with schizophrenia, there are only three Type 1 studies attesting to its efficacy. All of these studies were well controlled, with random assignment and comparison treatments. However, the evidence for the efficacy of supportive individual therapy was ambiguous, and, in one of the studies, extraordinarily high attrition limits the generality of the findings. In one study, individual supportive therapy led to worse outcomes at the 6-month point, but for those

who survived past the first year and continued in supportive therapy, their relapse rates and social functioning were significantly better at the 2-year follow-up point (Hogarty, Goldberg, & Schooler, 1974). In a second study, reality-adapted supportive therapy was no better than exploratory insight-oriented therapy on most measures but did result in reduced rates of rehospitalization and improved role functioning (Gunderson et al., 1984). A third study found supportive group therapy significantly inferior to social skills training in terms of social functioning and subjective quality of life (Marder et al., 1996).

Supportive group therapy is also widely used, especially with outpatients. The same principles of supportive therapy are used in these groups, which may vary in emphasis from medication education to setting realistic goals, encouraging coping efforts, and socialization. There are a half dozen Type 2 empirical trials of supportive group therapy, most of which found this modality superior to other treatments (Malm, 1982).

Behavior Therapy and Social Learning Programs

Since the initial empirical demonstrations in the 1960s of the utility of laboratory-generated principles of learning for persons with schizophrenia (Ayllon & Azrin, 1968), behavior therapy has been used to manage the full spectrum of symptoms, deficits, and disturbing behaviors found in this disorder (Brenner, Hodel, & Roder, 1990; Wong, Massel, Mosk, & Liberman, 1986). The majority of the hundreds of Type 3 empirical studies documenting the efficacy of reinforcement schedules, stimulus control, social modeling, shaping, and fading have used subjects longitudinally as their own controls. The designs have featured baseline periods followed by intervention, withdrawal of intervention, and return to intervention, as well as multiple baselines for which each of 3 or 4 subjects have differing durations on baseline conditions before receiving the intervention. While these experimental designs lack the generality of randomized clinical trials with groups of subjects receiving different treatments, they do possess one methodological advantage, namely, capitalizing on and controlling for the vast interindividual differences in schizophrenia.

Since practitioners often have difficulty applying research results generated by standardized protocols that require all patients—no matter how different—to

receive the same treatment, studies that use subjects as their own controls permit "fine tuning" the intervention until it shows clear-cut effects. Furthermore, intervention effects in these individualized protocols must be dramatically enough different from baseline rates of the targeted clinical problem so that the treatment effects can be "eyeballed" with little need for statistical significance. How often do we find results in the literature for which the differences between treatment and control groups are statistically significant but lack clinical significance?

There have been five Type I studies of behavior therapy and social learning programs (token economy) for treatment-refractory patients participating in hospital or day hospital programs in which social and tangible reinforcers were given to patients contingent on their engaging in prosocial behavior and activities (Baker, Hall, Hutchison, & Bridge, 1977; Fullerton, Cayner, & McLaughlin-Reidel, 1978; Kazdin, 1982; Menditto, Valdes, & Beck, 1994; Paul & Lentz, 1977; Schwartz & Bellack, 1975; Spiegler & Agigian, 1976). Typically, the token economy, supplemented with structured learning of self-care, recreational, and social skills, helps to organize and focus the staff-patient interactions around appropriate and functional behaviors. This contrasts with the inevitable attention given by staff in unstructured milieus to maladaptive and dangerous behaviors, thereby inadvertently reinforcing the very problems that brought the patient to the hospital in the first place.

The results of these studies have uniformly shown the efficacy of the token economy; however, because the delivery of contingent social reinforcement is a key element in the token economy, component analyses should "deconstruct" the multifaceted nature of this ward-wide, 24-hour-per-day modality. One such study found that day hospital patients were motivated to improve their behavior by the social reinforcement accompanying the contingent tokens rather than by the tangible rewards associated with the token exchanges (Lieberman, Wallace, Vaughn, Snyder, & Rust, 1977). Generalization of improved behavior from a highly structured token economy to the more randomly programmed "real world" requires graded levels of reinforcement schedules and contingencies; hence, regressed patients who enter a token economy will require frequent reinforcement and shaping of their deficient behavior, while those whose functioning has improved to the point of discharge readiness will benefit from a "credit card" level in which they

have free and continuous access to privileges and rewards as long as they meet criteria for maintaining their performance at a high level.

The most rigorous and well-controlled study of the token economy randomly assigned treatment-refractory patients to a social learning program, milieu therapy, or customary, custodial care (Paul & Lentz, 1977). On all measures of outcome—symptoms, activities of daily living, social behavior, discharge, tenure in the community, and cost effectiveness—the patients in the social learning–token economy program fared significantly better. However, this study was conducted prior to the introduction of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III)* (American Psychiatric Association, 1980) and may have included some individuals who would not meet current criteria for schizophrenia.

Cognitive Therapy

While cognitive therapy has been well documented for efficacy in depressive and anxiety disorders, it has only recently been used for persons who have schizophrenia. There are several different approaches to cognitive therapy, each based on the assumption that changing an individual's thoughts, attitudes, perceptions, self-efficacy, and information processing can have favorable effects on symptoms and personal functioning.

These approaches can be demarcated by the cognitive level targeted for therapy. The most "molecular" approach, termed *cognitive remediation*, focuses on improving or normalizing the most elementary cognitive functions—signal detection, sustained attention, verbal learning, and memory—each of which is abnormal in a large proportion of persons with schizophrenia (Green, 1993). The rationale fueling cognitive remediation holds that by improving elementary cognitive functions, an individual will improve in learning broader-based, and more clinically relevant, functions, such as work and social skills (Lieberman & Green, 1992). Cognitive remediation does appear to improve basic cognitive functions, but there is no scientific evidence to date to support its spreading to influence clinical or social variables (Lieberman & Green, 1992).

The most "molar" approach involves the consistent involvement of the patient in social skills training in which the patient is repeatedly taught to accurately perceive the social situation and its expectancies and to process the alternative responses that might be made

for successfully dealing with that situation. There is limited evidence that this "top-down" method actually results in more salutary brain functioning (Storzbach & Corrigan, 1996).

In between the molecular and molar approaches are 15 studies that utilize methods for uncovering and changing irrational, automatic thoughts; negative self-appraisals; delusions; social schemas; and coping with persistent symptoms of the disorder (Kingdon & Turkington, 1994; Tarrier, Beckett, & Harwood, 1993). Here, the evidence is scanty, with only one Type 2 study extant that revealed promising, but not definitive, results (Garety et al., 1994; Tarrier, Beckett & Harwood, 1993). Five studies using subjects as their own controls—Type 3 studies—also found promising results for cognitive restructuring of delusions. However, many studies of this genre have used questionable methods of diagnosis, and it is possible that some subjects have delusional disorders, less serious illnesses than schizophrenia (Bouchard, Vallieres, Roy, & Mazide, 1996). The approach that has received the most empirical evaluation, termed *integrated psychological therapy*, consists of a sequential hierarchy of training procedures, starting with basic functions such as attention and progressing through problem solving to social skills training (Brenner et al., 1994). Results from studies of integrated psychological therapy must be viewed as tentative because of methodological limitations.

Structured, Educational Family Interventions

With the growing number of international replications of the family emotional climate as one of the most powerful predictors of relapse in schizophrenia (Bertrando et al., 1992; Jenkins & Karno, 1992; Kuipers & Bebbington, 1988), interventions have been designed and empirically validated that are aimed at engaging families as active participants in the treatment and rehabilitation process while improving their coping capacities and those of their mentally ill members. A variety of terms have been coined to describe these interventions, including *family psychoeducation*, *behavioral family management*, *behavioral family therapy*, *family-aided assertive community treatment*, and *multiple family therapy* (Mueser, Glynn, & Liberman, 1994).

These methods have substantial elements in common, including structured and clear expectations for

participation by family members and patient; outreach and other efforts to connect with the family and provide them support; practical education about the nature of schizophrenia, and how to cope with it; assisting the family to effectively utilize available treatments and community resources; teaching stress management techniques; encouraging family members to pursue their own goals and well-being without becoming emotionally overinvolved with each other; and teaching the family better means of communicating and problem solving (Strachan, 1992).

Several Type 1 clinical trials have been conducted using structured, educational family interventions, all of them showing the superiority of adding family intervention to medication and customary case management (Falloon et al., 1985; Goldstein, Rodnick, Evans, May, & Steinberg, 1978; Hogarty et al., 1986; Leff et al., 1989; Leff, Kuipers, Berkowitz, Eberlein-Vries, & Sturgeon, 1982; Liberman, Falloon, & Aitchison, 1984; MacFarlane, Stastny & Deakins, 1992; Randolph et al., 1994). One key feature of efficacious family interventions is their duration—a minimum of 9 months or a year of weekly and biweekly family sessions appears necessary for therapeutic impact.

The outcomes assessed in these studies have included relapse rates, family attitudes and emotions, social functioning, quality of life, family burden, and cost effectiveness. In terms of relapse rates, converging evidence suggests that these structured family interventions reduce relapse by one half over that achieved with medication and case management alone. An multihospital study sponsored by the National Institute of Mental Health [NIMH] of family interventions found approximately the same relapse rates in a large sample of patients as reported in smaller, single-site, controlled studies; however, this multisite study did not show an advantage for more intensive behavioral family management over monthly, supportive, and educational family sessions (Schooler, 1996).

Because the multisite study used family clinicians who were second-generation users of these methods and were not identified with the individuals who developed the techniques, one might consider the results as evidence of effectiveness from a services research perspective. Unfortunately, this study did not use a control group receiving no family intervention, making it difficult to interpret the significance of the results. Moreover, assessment of families' problem-solving skills in the intensive form of intervention revealed no change from beginning to end of treatment, sug-

gesting that the treatment failed to achieve its goal of improving family communication skills.

Social Skills Training

Social skills training is defined by behavioral techniques or learning activities that enable persons with schizophrenia and other disabling mental disorders to acquire instrumental and affiliative skills for improved functioning in their communities (Lieberman, DeRisi, & Mueser, 1989). Training can be done with standardized curricula, or modules, that cover knowledge and skills that most persons with schizophrenia need for improved life functioning and management of their illness (e.g., use of antipsychotic medication, communication with mental health professionals, recognizing prodromal signs of relapse, developing a relapse prevention plan, coping with persistent psychotic symptoms, avoiding street drugs and alcohol, developing leisure skills, conversation skills). Alternatively, skills training can be individualized, with goals for improving personal effectiveness derived from each person's long-term and personalized aspirations for role functioning.

Sessions are typically conducted one to three times per week, with groups of 4–10 patients in office, community mental health center, day hospital, or hospital settings. Skills training requires that patients be reasonably well stabilized on their medications, be able to follow instructions and pay attention to the training process, and be able to tolerate sessions lasting 45–90 minutes. Thus, social skills training is generally used with outpatients who are living in the community in which their skills can be applied. Because of the attentional requirements of the training, this modality is not suitable for floridly and acutely symptomatic patients nor for those with persistent high levels of thought disorder and distractibility unless specially designed for these populations (Massel, Corrigan, Lieberman, & Milan, 1991; Mueser, Wallace, & Lieberman, 1995).

Trainers draw on behavioral learning principles and techniques such as behavioral rehearsal (role playing), social modeling, abundant positive reinforcement for incremental improvements in social skill, active coaching and prompting, in vivo exercises, and homework assignments (Corrigan, Schade, & Lieberman, 1992). Skills training techniques also are components of other structured learning modalities, such

as family interventions and vocational rehabilitation (Lieberman, Vaccaro, & Corrigan, 1995).

Evidence for the efficacy of social skills training addresses the following outcome dimensions: acquisition, durability, and utilization of the skills in real life; improvements in social functioning; reductions in relapse rates and rehospitalization; and enhanced quality of life. There are more than 40 Type 1 or Type 2 studies and two meta-analyses that have addressed one or more of these areas of outcome (Benton & Schroeder, 1990; Corrigan, 1991). Overall, there is excellent and well-replicated evidence for the efficacy of social skills training in the acquisition of the skills taught, with durability extending for at least 1 year. Generalization of the skills to real-life use, social functioning, reductions in relapse rates, and enhanced quality of life has been studied less frequently, but the limited data are positive, especially when training extends for 1 year or longer.

In two Type 1 studies, the therapeutic impact of social skills training was well documented on several dimensions of outcome. With outpatients who were all receiving maintenance doses of depot antipsychotic medication, 1 year of weekly social skills training sessions reduced relapse by one half compared with those receiving medication alone (Hogarty et al., 1986). The reduction in relapse rate was the same as achieved by structured, educational family intervention plus maintenance medication. Patients receiving social skills training also evinced significant improvements in social adjustment. When social skills training and family intervention were combined, 1-year relapse was zero.

In the second Type 1 study (Eckman et al., 1992), stable outpatients with chronic schizophrenia were randomly assigned to twice weekly supportive group therapy or social skills training for which the training included medication and symptom self-management, social problem solving, and individualized personal effectiveness. While all patients received low-dose depot maintenance medication, those who experienced prodromal symptoms were randomized to receive time-limited oral antipsychotic drug or a placebo during the prodrome.

Results indicated that the patients receiving social skills training, but not those getting supportive group therapy, significantly improved their skill levels, which were durable over a 1-year period and were found to be utilized in their real-life settings. Moreover, even patients with relatively high levels of persisting symp-

toms (but not severe thought disorder) learned the skills as well as those with minimal symptoms. In addition, the patients who learned social skills showed significantly better social functioning and quality of life over the 2-year period of the study. Skills training also reduced relapse rates in the subgroup of patients who received a placebo, but not time-limited oral medication, during prodromal periods, suggesting that supplemental antipsychotic medication at times of prodromes or social skills training conferred similar degrees of protection against relapse to this population (Marder et al., 1996).

Vocational Rehabilitation

Lifelong unemployment, as well as disability pensions from the Social Security Administration, have contributed to the profound stigmatization of persons with schizophrenia as having a poor quality of life and of being a burden on their families and society. Until the past decade, most efforts at vocational rehabilitation were carried out in sheltered workshops or psychosocial rehabilitation clubhouses in which individuals with mental disorders had little opportunity to learn marketable skills for community employment. In addition, state-run vocational rehabilitation agencies gave short shrift to the mentally ill and infrequently coordinated their services in functional and effective ways with mental health professionals who were responsible for all other psychiatric services. Fragmentation led to futility and nihilism by rehabilitation specialists, as well as psychiatric practitioners.

There was one notable exception to this pattern, namely, the Fairweather Lodge program. In the 1960s and 1970s, George Fairweather and his colleagues designed a rehabilitation program at the Menlo Park (California) Veterans Administration Medical Center that brought together into cohorts groups of interpersonally compatible patients with serious mental disorders; trained them to offer cohesion and social support to each other; organized the cohorts so the skills, interests, and deficits of the group were complementary; and then gradually brought the group into the community as a "lodge." The emphasis was on work and independent living skills. Staff taught work and community living skills, first in the hospital and then in the community lodge, and then gradually faded their involvement and level of supervision so that the group was finally functioning autonomously.

The results were highly encouraging, with every dimension of outcome (e.g., work, rehospitalization) showing substantially and statistically significantly greater benefits for the lodge cohorts compared to randomly assigned controls (Fairweather, 1980; Fairweather, Sanders, Maynard, Cressler, & Bleck, 1969). Moreover, the lodge program was successfully disseminated to more than 100 institutions around the United States, indicating the robust nature of its multifaceted approach to rehabilitation. Its multifaceted nature was also a methodological problem, however, since the components of the lodge service system were never disassembled and studied analytically.

Because of the successful demonstrations of competitive employment for the mentally retarded, the Americans With Disabilities Act, the consumer advocacy movement, and community support programs that assumed responsibility for broader and better integrated services, vocational rehabilitation for the mentally disabled is rapidly shifting to a "place, then train" model of supported employment (Bond, 1992). Supported employment is based on the following principles:

1. Vocational rehabilitation is an integral, not separate, component of psychiatric treatment and requires a team approach with specialists in job development and placement.
2. The goal of supported employment is to place an individual in competitive employment in the community, with vocational assessment and training taking place on the job. Jobs are selected and support services are provided according to the preferences and choices of the consumer.
3. Job coaching and supports from mental health and rehabilitation professionals, including ready access to psychiatric, pharmacological, and crisis services, are provided indefinitely—consistent with the long-term, stress-related nature of schizophrenia and other disabling disorders.

The development of supported employment is so new that little empirical work has been published on this innovation. However, even more disabled and cognitively compromised mentally retarded clients have been repeatedly shown to benefit from supported employment (Wehman & Hill, 1989; Wehman & Moon, 1987). Data-based studies have reported 65% to 80% employment rates and 66% and 33% job reten-

tion rates at 6 months and 1 year, respectively, following placement.

Surveys of state vocational rehabilitation agencies have found a growing number of mentally disabled persons enrolled in supported employment programs, and research is slowly following practice. A Type 1 study of an approximation to supported employment (accelerated transitional employment) found that seriously mentally ill clients who made the transition more rapidly into real jobs had almost three times more success in attaining competitive employment 15 months later than a comparison group who made a gradual transition (Bond & Dincin, 1986). In addition, a series of three Type 3 studies of supported employment integrated with assertive case management teams have shown this model to result in twice the rate of competitive employment compared with more traditional rehabilitation services that offer extended periods of prevocational training and work adjustment (Drake & Becker, 1996).

One other method of vocational rehabilitation, the job-finding club, deserves mention. This approach assumes that a client is ready for work but requires training and structured support in the job search process. Individuals set goals for the types of jobs for which they are qualified and participate in a 1–2-week program that offers training in creating a resume, finding job leads, telephoning and interacting with employers to follow up leads, going through a job interview, and maintaining motivation for a job search that may require full-time effort for many weeks.

No controlled studies with mentally ill clients have been conducted for the job-finding club, but Type 3 empirical evaluations of this approach have indicated that 19% to 61% of mentally ill clients obtain competitive employment, usually after an average of 25 days of participating in the club (Eisenberg & Cole, 1986; Jacobs, 1988; Jacobs, Collier, & Wissusik, 1992; Jacobs, Kardashian, Kreinbring, Ponder, & Simpson, 1984). The wide variation in outcomes appears to be a function of the population studied, with psychotic individuals faring much worse than those with less-impairing disorders.

One approach to vocational rehabilitation that has become widely popular during the past 50 years is the psychosocial rehabilitation center or clubhouse. This model includes programs that are based on Fountain House in New York (Beard, Propst, & Malumud, 1982; Dincin, 1975). These programs provide an accepting peer-oriented clubhouse that deemphasizes

the patient's role and stresses the individual's own responsibility for rehabilitation. The program typically offers a continuum of vocational opportunities ranging from prevocational work crews, usually unpaid work opportunities within the center, to transitional employment, which consists of temporary community jobs employing patients under an arrangement between the program and a community employer. Although the long history of the clubhouse approach suggests that it has survived a trial-and-error process, empirical studies supporting its utility and efficacy are lacking (Bond, 1992).

Case Management and Treatment Teams

During the past two decades, well-controlled research has documented the improved outcomes and lower costs associated with brief hospitalization for acute psychotic episodes and the use of community-based alternatives to hospitalization, such as partial hospitals and intensive case management built into continuous, outpatient treatment teams (Goldman, 1996; Herz, 1996). For example, 11 days of hospitalization followed by day hospital and outpatient treatment produced better symptom outcomes than 60 days of hospitalization with outpatient follow-up. Social functioning 1 and 2 years later also was better for the patients who were hospitalized briefly and then returned to their natural social and family support networks (Herz, Endicott, & Spitzer, 1977).

Thus, patients with schizophrenia and other disabling mental disorders should be discharged when the specific indications for hospitalization are no longer present (e.g., assaultiveness, florid and disabling psychotic symptoms). In addition, clinicians should attempt to ensure that appropriate continuity of care, social and family supports, and housing are available before the patient is discharged to avoid the "revolving door" phenomenon of hospitalization-discharge-rehospitalization and the tragic but all too common homelessness that afflicts so many thousand of the seriously mentally ill today.

Case management, and the treatment teams in which it is embedded, are the "glue" that holds together and coordinates the array of biopsychosocial services described above. In addition, case management provides the mechanism for assuring that patients or clients obtain those services appropriate for their phase of illness, tailored to the individual's symptoms, psychosocial functioning, personal goals, and

environmental resources. At a minimum, case managers function as monitors of the quality of services they broker and coordinate with various agencies and practitioners to fulfill the goals of their severely mentally ill clients. In theory, each case manager is a focal point of accessibility and accountability who maximizes the effectiveness and efficiency of services (Intagliata, 1982; Baker & Intagliata, 1992).

Three main forms of case management have evolved, distinguished by the level of training and quality and amount of direct clinical services delivered to the client: brokerage case management, clinical case management, and Training in Community Living. The brokerage model of case management has been found to be relatively ineffective in fulfilling the needs of severely mentally ill individuals. For example, one Type 3 study evaluated the effects of this brokerage model of case management on 417 severely mentally ill individuals, all of whom had been hospitalized at least twice (Franklin, Solovitz, Mason, Clemons, & Miller, 1987). Franklin's group found that the costs and use of services increased after case management was introduced into the mental health agency, but there was no corresponding improvement in functioning or reduction in the rates and durations of subsequent hospitalizations.

In contrast, the polar opposite model of case management—the Training in Community Living (TCL) program developed 20 years ago by Stein and Test and their colleagues—has been shown to be effective in several Type 1 studies (Stein & Test, 1985; Test, 1992). The TCL model organizes the service delivery system into multidisciplinary clinical treatment teams that “serve as fixed points of responsibility for assisting patients in meeting all of their needs from the day that they enter the program to a time extending many years into the future” (Test, 1992, p. 158). Each member of the interdisciplinary team serves case management functions, with a ratio of 1:20 or less of staff to clients.

Services are delivered in individuals' own environments and include direct assistance with managing their illnesses (e.g., medication, 24-hour crisis availability), modifying the environment to enhance its supportiveness (e.g., facilitating entitlements, family education, development of social networks), direct assistance with the tasks of community living (e.g., rehabilitation services, including home visits), and supported employment supervised by a vocational specialist on the TCL team. The full array of comprehen-

sive and continuous services, keyed to each individual's changing needs, is provided by the team, avoiding the frequent fragmentation and occasional interne-cine “warfare” among service providers who are contracted through “brokerage” to deliver different types of services.

The effects of TCL have been favorable, with the qualification that services may need to extend for an indefinite period of time with a frequency and intensity that match the changing needs, interests, motivation, and priorities of the patient. The originators of TCL found that 14 months of TCL services resulted in lowered rates of hospitalization, more time in independent living, and improvements in role functioning (Stein & Test, 1980). Replications of the TCL model (Hoult, 1986; Mulder, 1982; Test, 1992) confirmed these results, particularly for lowered rates of hospitalization. It has been determined that for role functioning (e.g., friendships, employment) to improve, the TCL team must invest the time and effort of specialists on the team for teaching social and vocational skills and creating opportunities to use the skills in real-life situations.

From an early study of TCL that found that erosion of the gains achieved by 14 months in TCL occurred when patients were referred to customary care in the community (Test, Knoedler, & Allness, 1985), it was realized that TCL must be available indefinitely to ensure maintenance and extension of the clinical gains (Test, 1992). The TCL model is costly and labor intensive, but does have the capability to facilitate individuals' movements through the acute, stabilizing, stable, and recovery stages.

An intermediate model is clinical case management, for which the case manager has clinical training and skills, functions as a primary therapist (versus paraprofessional “enablers”) and can provide interventions that improve individuals' clinical states, role functioning, and environmental supports. While this model attempts to provide comprehensive and continuous services to clients and has been found to result in improvements in subjective quality of life and satisfaction with case management (Huxley & Warner, 1992), the clinical case manager can easily become overburdened with responsibilities and is subject to “burnout” (Bachrach, 1992; Bond et al., 1991). Two other Type 2 studies of clinical case management have found empirical support for its efficacy, although one study was flawed by its use of historical controls and a lack of randomization (Goering, Wasylenki,

Farkas, Lancee, & Ballantyne, 1988; Modrcin, Rapp, & Poertner, 1988).

Figure 9.2 depicts the tripartite model of clinical case management in the shape of a triangle. At the base of the triangle are the basic clinical skills required to form and maintain a therapeutic alliance. The left limb of the triangle comprises a clinician's technical skills in assessment and treatment. The right limb of the triangle includes consultative, advocacy, coordinating, and liaison skills required to open community-based resources, such as housing and social service entitlements, for the client. In employing demonstrably efficacious and cost-effective methods of intensive or assertive clinical case management (Olfson, 1990; Weisbrod, Test, & Stein, 1980), it is important for practitioners to utilize the treatment methods with fidelity to the key features of the innovative model. For example, agencies that have implemented assertive community treatment, or PACT (Program for Assertive Community Treatment), with caseloads that are significantly greater than 1 to 20 per case manager or treatment team member, have not been successful in achieving good outcomes (McGrew, Bond, Dietzen, & Salyers, 1994).

Similarly, schizophrenia and substance abuse, which are often comorbidly present in high propor-

tions of urban populations, present special challenges to the treatment team and case manager in diagnosis, substance-specific interactions, psychosocial treatments, and psychopharmacology. In most settings, substance abuse and schizophrenia are treated by totally different agencies, resulting in fragmented and often incompatible approaches. Even when continuity of care is assured by a fixed point of clinical accountability for the dually diagnosed individual, poor treatment outcomes can ensue from overemphasizing the treatment of either disorder rather than providing a synchronous, seamless approach that leads to abstinence from substance abuse and remission of psychotic symptoms (Drake, Noordsy, & Ackerson, 1995).

FUTURE DIRECTIONS

It should come as no surprise that the efficacy of psychosocial treatments, requiring as they do a functional brain capable of assimilating and retaining information and skills, is attenuated by cognitive impairments that are enduring traits in most individuals with schizophrenia (Nuechterlein et al., 1994). Studies carried out in a variety of laboratories have documented the adverse influence of deficits in memory, sustained



FIGURE 9.2. Competencies of clinical case managers can be organized into three major domains: (a) the bottom limb of the triangle represents relationship and personal engagement skills; (b) the left limb of the triangle represents technical, biobehavioral assessment, and treatment skills; and (c) the right limb of the triangle represents consultation-liaison and advocacy skills.

attention, and verbal learning on the capacity of individuals with schizophrenia to benefit from psychosocial interventions (Bowen et al., 1994; Corrigan, Wallace, Schade, & Green, 1994; Kern, Green, & Satz, 1992; Mueser, Bellack, Douglas, & Wade, 1991). These findings have generated interest in (a) determining the differential "rehabilitation readiness" of individuals with schizophrenia and (b) feasibility studies of cognitive remediation to improve information processing in the brain (Green, 1993; Liberman & Green, 1992).

Current methods for remediating cognitive impairments in schizophrenia have utilized rather conventional behavioral techniques such as monetary reinforcement and instructions. These techniques have not resulted in impressive durability or generalizability of treatment; hence, new strategies for remediation will undoubtedly be developed in the coming decade. For example, one study recently completed used "errorless learning" to promote durability of effects in teaching schizophrenic individuals greater cognitive flexibility in the Wisconsin Card Sorting Task. Not only did this method of training result in normalization of the responses by the persons with schizophrenia, but it also showed greater durability than the more conventional techniques (Kern, Wallace, Hellman, Womack, & Green, 1996).

Since verbal memory and verbal learning are serious impediments to psychiatric rehabilitation among persons with schizophrenia, techniques to compensate or overcome these deficits will need to be developed. One approach is to capitalize on the implicit or procedural learning capacity of individuals with schizophrenia. Implicit learning involves those psychomotor actions that are repetitive, overlearned, and can be employed "without thinking" or conscious awareness. Examples are riding a bicycle, catching a ball, saying nighttime prayers, or hitting a nail with a hammer. At the Clinical Research Center for Schizophrenia and Psychiatric Rehabilitation at UCLA, procedural learning was shown to be unimpaired in schizophrenia (Kern, Green, Wallace, & Goldstein, 1996).

Similarly, spatial visual learning is not as impaired in schizophrenia and can be utilized to overcome obstacles posed by verbal learning; for example, pictures of a concept, event, or interpersonal skill could be used to teach more flexible use of social skills than is currently available. Plans are being made to craft pictures that will delineate naturalistic situations in

which certain "rules governing social behavior" will be taught. Generalization of the learning to everyday life interactions will be assessed.

Assessment Guiding Treatment

Given the factors that influence social and instrumental role functioning, there is a pressing need to develop better means of evaluating these functional domains. Moreover, evaluation methods must be linked to treatment planning and treatment monitoring and evaluation and not exist as a separate entity. Assuming that the goal of psychiatric treatment and rehabilitation is to assist individuals to reduce their symptoms and relapses, improve their functioning, enhance their quality of life, and attain their personalized goals, better methods of assessing roles, individuals, environments, and treatment effects (including both medication and psychosocial treatments) would foster research—both clinical and services research—and yield research that was more relevant to the needs of consumers and practitioners.

Clinicians could allocate scarce treatment resources based on information about the complexities of the specific role(s) to which an individual aspires, the skills in the individual's current behavioral repertoire, the degree and predictability of environmental supports and rewards, and obstacles (e.g., symptoms, bizarre behaviors) that stand in the way of goal attainment in role functioning. This allocation could be the result of an algorithm that prescribes the balance of skills training and environmental modifications that maximizes the probability of improving an individual's functioning. The algorithm could itself be developed based on research investigating the process of "expert" clinicians' decision making, yielding a system that could be modeled on a computer and available to all clinicians regardless of experience and discipline. The CD-ROM and virtual reality modalities will create learning opportunities for clinicians and consumers that are more cost effective, requiring minimal staff time.

Curricula for social skills training and family intervention can be refined, standardized, and distributed in a format that allows them to be easily accessed and efficiently delivered. Developing training curricula is extremely time consuming, and clinicians may achieve better outcomes by focusing their efforts on delivering training rather than producing it. Especially in the current era of cost containment and managed

care, the use of reliable, validated, and standardized treatment programs that can be adapted to the individual will be in much demand. Current technology, such as computer-based, interactive training, may provide an efficiently delivered format that allows a relatively high degree of individuation. Furthermore, the current efforts to improve an individual's persistent cognitive deficits with "cognitive rehabilitation" techniques may also help them to participate more efficiently in skills training.

Social System Interventions

Developing techniques to explicitly increase environmental support could be helpful. Currently, the technology for this approach to rehabilitation emphasizes low-key and permissive "psychosocial clubhouses" and "consumer-run" rehabilitation services. The Social Security Administration has established "work incentives" for disabled individuals, such as the Program for Achieving Self-Support. Qualified individuals can continue to receive their SSI (supplemental security income) or SSDI (social security disability income) payments for up to 2 years while they earn money in jobs to pursue independent living or educational experiences that will enable them to become more independent and job ready. In the future, more of these work incentives will become available as empirical data reveal the harmful effects of prolonged disability status (Lieberman & Mintz, 1990; Shaner et al., 1995). As the emphasis in our society moves more toward competitive employment, techniques that will more reliably assure job placement and training on the job are going to receive more interest from the federal, state, and local governments. Not only will welfare recipients be the focal point of interest, but individuals on Social Security disability will also gain priority for conversion into productive citizens. Training programs for employment specialists, mental health team members, consumers, family members, and employers will become increasingly focused, structured, and empirically based. The job-finding club is one example of an approach that can be "modularized" and fit into existing programs with a trainer's manual, participant's workbook, and demonstration video. Another example is the Workplace Fundamentals Module, which incorporates the job club into a broader approach to job placement and job maintenance (Wallace, 1996). In keeping with the Americans With Disabilities Act, these techniques could be used

to accommodate individuals with varying levels of skills or to provide variations in support as an individual's skills increased with training and experience.

Dissemination and Adoption of Innovation

Empirical documentation of a treatment's efficacy rarely is sufficient to promote its dissemination and adoption by clinicians (Backer, Liberman, & Kuehnel, 1986). Even with new medications, which require only a physician's change in prescription-writing behavior, pharmaceutical firms use small armies of representatives to "teach" physicians about and introduce them to how to use the new medication. The utilization of a psychosocial innovation—such as social skills training—is much more difficult to bring about.

There have been some lessons learned about the basic principles that can be used to overcome inertia in practitioner's behavior, for example, personal influence (e.g., demonstrating the new treatment technique and offering mentoring and apprenticeships), administrative mandates and support, congruence of the innovation with previous practices, and "user friendliness" of the innovation. The social skills training modules in the University of California at Los Angeles Social and Independent Living Skills Program reflects user friendliness insofar as they are pre-structured and well-organized curricula that can be readily used by most professionals and paraprofessionals who are comfortable working with the seriously mentally ill.

Large-scale field trials in many different settings suggest that the modules are indeed user friendly and widely adopted by clinicians (Eckman, Liberman, Phipps, & Blair, 1990). In fact, within a brief period of 10 years, the modules have been translated into more than 12 languages and have shown efficacy in controlled studies in Finland; Norway; Poland; Bulgaria; Korea; Quebec, Canada; and Japan.

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