Psychosocial Interventions in the Management of Schizophrenia:

Overcoming Disability and Handicap

Robert P. Liberman, M.D.
Professor of Psychiatry
University of California at Los Angeles

Director, Clinical Research Center for
Schizophrenia and Psychiatric Rehabilitation
Chief, Rehabilitation Services
Brentwood Division of the West Los Angeles
VA Medical Center
Los Angeles, California

Director, Clinical Research Unit
Camarillo State Hospital
Camarillo, California

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Persons suffering from schizophrenia not only can be treated but can be rehabilitated as well. When judiciously combined, pharmacologic and psychosocial treatments can improve the course and the outcome of schizophrenia. What are these psychosocial treatments and how effective are they? Are they sufficiently specified and operationalized to permit application by practitioners in the wide array of psychiatric service settings? These are questions that will be addressed.

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Model of Schizophrenia

Designing and implementing effective treatment and rehabilitation programs for schizophrenia requires insight into the factors that interact to contribute to the cause, the clinical course, and the outcome of this disorder. A model for understanding schizophrenia is shown in Figure 1.

This model involves three groups of factors: 1) vulnerability factors that predispose individuals to schizophrenia; 2) socioenvironmental stressors that, when superimposed on vulnerability factors, determine the onset and relapse patterns of the disorder; and 3) protective factors that filter the noxious effects of the vulnerability and socioenvironmental factors and influence the degree of psychotic symptomatology. The protective factors also determine the extent of long-term impairments, disabilities, and handicaps associated with schizophrenia.

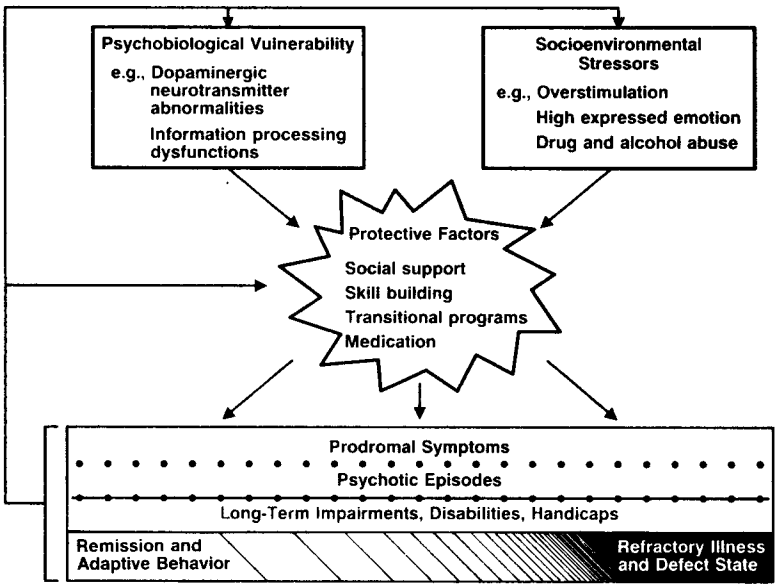

Figure 1. A model for schizophrenia.

One model for understanding schizophrenia involves vulnerability factors that predispose individuals to the disorder, socioenvironmental factors that determine the onset and relapse patterns, and protective factors that influence the degree of psychotic symptomatology exhibited.

An overriding characteristic of schizophrenia is its variability—both within an individual and from person to person. Patients can be in remission for long periods of time and can be adequately adjusted socially. Alternatively, they can be refractory to all available treatments. Patients can move back and forth along a gradient from frank psychotic symptoms and social disability to symptom remission and adequate social functioning.

Schizophrenia: Pathology, Impairment, Disability, and Handicap

Helping schizophrenic patients move away from the end of the gradient associated with a poor clinical outcome and prognosis requires an appreciation of the definitions of and the boundaries between the pathology, impairment, disability, and handicap inherent in schizophrenia (Table). *Pathology* is defined as the central nervous system abnormalities responsible for the development and expression of schizophrenia. *Impairment* results from the intrusion of symptoms and the loss of basic psychological functions like attention, information processing, and affect. *Disability* is the total lack of ability or a limited ability to perform ordinary social and vocational tasks. Typically, disability stems from impairments—and impairments are the result of an underlying pathology. Finally, *handicap* is defined as a disadvantage that limits or prevents the patient from fulfilling normal roles. A handicap stems from both impairments and disabilities. Specific examples of pathologies, impairments, disabilities, and handicaps are shown in the table.

Clinically, there are different ways to approach pathology, impairment, disability, and handicap. Pathology is approached by methods such as psychopharmacology and brain imaging. Impairments should first be characterized through careful diagnosis and assessment of the psychopathology. They can be treated by pharmacology, behavior therapy, and stress management training. Disabilities are measured and evaluated by assessing patients in functional situations as they interact with peers, family, and/or a job situation. Disabilities can be reduced

Improving the clinical outcome and prognosis of schizophrenic patients requires an appreciation of the pathology, impairment, disability, and handicap inherent in the disorder.* Pathology *refers to the underlying abnormalities that result in schizophrenia;* impairment *refers to symptoms and cognitive deficits;* disability *is the limitation in performing ordinary social and vocational tasks; and* handicap *is the unyielding disadvantage that limits normal functioning.

by specific skills and vocational training programs. Some disabilities resist treatment efforts and remain serious handicaps to the patient's rehabilitation. Such handicaps can be minimized by case management efforts and community support programs where others satisfy the needs that the patient cannot satisfy himself. Government policies such as the social security program also help to attenuate handicaps experienced by schizophrenic patients.

By understanding how to define and manage the pathology, impairment, disability, and handicap associated with schizophrenia, we can devise a comprehensive strategy for the treatment and rehabilitation of patients with this disorder. Key elements of this strategy include prevention of relapse, amelioration of impairments, remediation of social and vocational disabilities, and removal of handicaps by compensating for residual impairments and disabilities.

Table

Characteristics Inherent in Schizophrenia

	Pathology	**Impairment**	**Disability**	**Handicap**
Definition:	Abnormalities in the central nervous system responsible for etiology and maintenance of the disorder	Intrusion of symptoms or loss of psychosocial functions	Restriction or lack of ability to perform social and vocational activities or tasks	Disadvantage resulting from impairments or disabilities that limit or prevent the fulfillment of normal roles
Examples:	Dopaminergic dysfunctions	Positive or negative symptoms	Deficient social skills	Unemployment Homelessness
	Enlarged ventricles	Distractibility and attentional deficits	Lack of job-finding skills	Family estrangement

Psychiatric rehabilitation of schizophrenic patients involves not only matching treatment and rehabilitation efforts with the impairments and disabilities, but also utilizing support programs to minimize handicaps.

Psychiatric Rehabilitation

Let us turn the focus to issues related to rehabilitation of schizophrenic patients. Psychiatric rehabilitation can be visualized as a cube (Figure 2).

One dimension is the stage of schizophrenia; along this dimension lies the full array of schizophrenic symptoms ranging from prodromal signs through a florid psychotic episode to remission. The second dimension consists of treatment and rehabilitation techniques to reduce impairments and disabilities. These include pharmacotherapy, family and cognitive therapies, social skills training, and vocational rehabilitation. The third dimension of the cube pertains to support programs aimed at minimizing residual handicaps. A variety of programs are listed along this dimension, including family support, social service entitlements, case management, and psychosocial clubs. Utilizing this three-dimensional approach for rehabilitation involves not only matching treatment and rehabilitation efforts with the particular impairments and disabilities that are manifested, but also taking into account the support programs that are available to the patient.

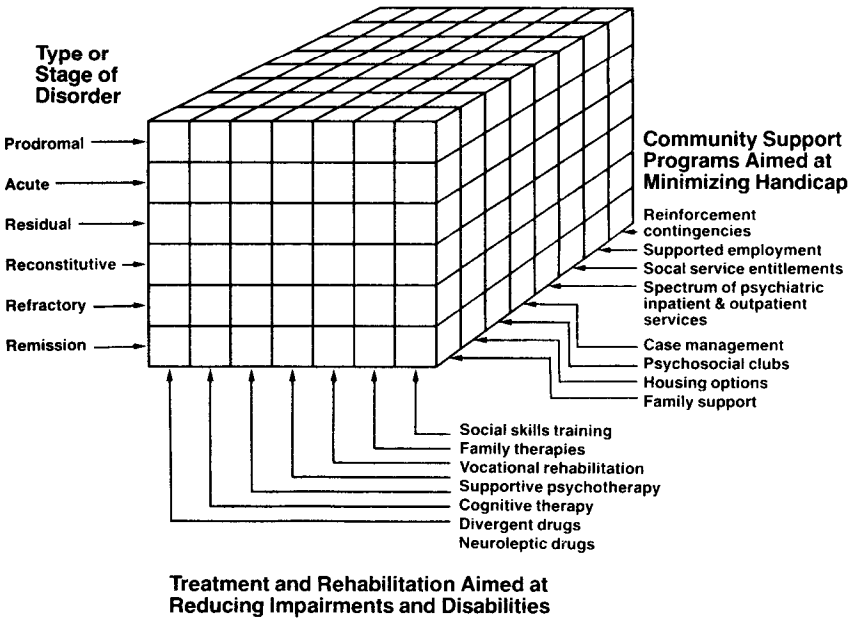

Figure 2. The "complex cube" of psychiatric rehabilitation.

Teaching Symptom Management

On the second dimension of the complex cube (Figure 2), one established method for dealing with impairment among schizophrenic patients is the use of antipsychotic medication. Drug treatment can be augmented, though, by utilizing another technique on that same dimension: social skills training. Patients can be taught to manage their symptoms and to cooperate with their psychiatrists so that symptom recognition occurs early and drug treatment can be provided. We are developing a training module called "Symptom Self-Management," which is part of a program for teaching social and independent living skills. In this module patients are taught how to identify their specific warning signals of relapse and how to cope with these warning signals. For those patients who are never fortunate enough to go into periods of remission, the module teaches how to manage persisting symptoms so that they interfere less with daily life. Patients are also taught how to prevent stress by developing a healthier life-style. The module consists of a training manual, a videotape that illustrates the required skills, and a patient workbook.

One of the skill areas taught in the Symptom Self-Management Module is identifying the warning signals of relapse. In this part of the module, patients learn about the benefits of early intervention. Specifically they learn how to discuss warning signals with their physician and relatives; how to describe the warning signals and to periodically complete a checklist of these signals; how to enlist the aid of relatives in identifying an impending relapse; how to request assistance from relatives and friends; and how to cope with denial. In addition, the use of good communication skills such as eye contact and clear, audible speech is reinforced.

The Symptom Self-Management Module teaches patients to identify their warning signals of relapse, to manage these symptoms, and to cooperate with the psychiatrist to ensure that drug treatment is provided early.

These skills are taught through a series of learning activities (Figure 3). Patients are first oriented and motivated to participate in the learning process by getting a clear picture of the value of what is going to be taught. They watch a videotape in which actors, playing the parts of patients, model the skills that are the subject of the lesson. Videotapes are used to capture attention and transmit information to compensate for the cognitive deficits often apparent in patients with schizophrenia. The videotape is followed by a question-and-answer period to ensure that the patients are absorbing the information. Patients then participate in a role-play during which they practice and learn the skills observed in the videotape.

In the first in a series of problem-solving exercises, patients are taught how to mobilize the resources necessary to use the skills. Examples of problems to be solved include how to use the telephone to make an appointment and how to arrange for transportation to see the doctor. In the second series of problem-solving activities, patients are taught how to cope with obstacles that interfere with the use of the skills. An example of a problem in this series is arriving at the clinic to discuss the occurrence of some warning signals and finding that the doctor has been called away for an emergency.

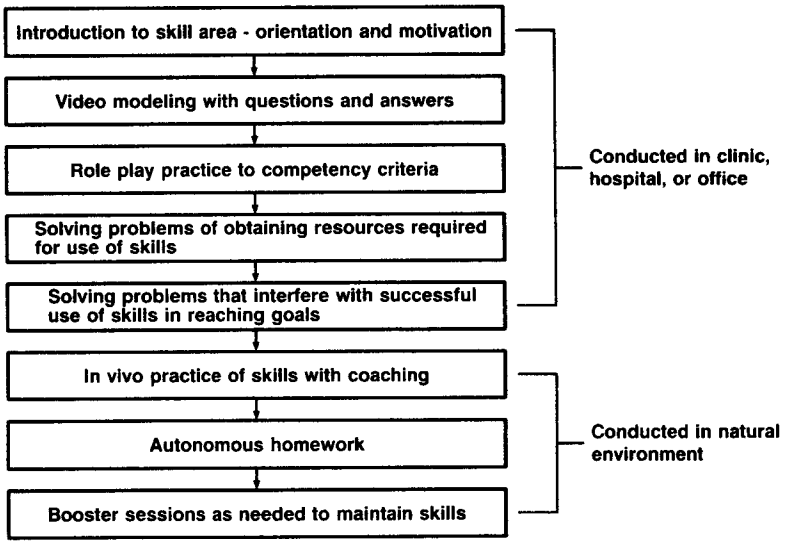

Figure 3. Learning activities in the Symptom Self-Management Module.

To this point, all of the learning activities take place in the clinic, hospital, or doctor's office. A series of activities in the patient's natural environment is then undertaken with the therapist providing some coaching. Patients must also complete homework assignments in which they implement the skills on their own. Booster sessions are available to help patients maintain their newly acquired skills.

Social Skills Training Techniques

A number of skills can be taught in the same way as described for symptom self-management: medication self-management; instrumental skills such as money management, finding and maintaining a job, and personal care and hygiene; and affiliative skills that are necessary for self-esteem, e.g., friendship, dating, conversation, and family communication. Teaching these skills requires a highly structured approach that is infused with established behavioral learning principles. In addition, the training program must be individualized for each patient, and each patient must be involved in the goal-setting effort as much as possible. Social skills training is usually offered in conjunction with appropriate and judicious use of medication and is allied with the social supports on the third dimension of the complex cube (Figure 2). Skills training, especially in the highly prescribed modules now available, can be provided by psychiatrists or other mental health practitioners as a billable individual, family, or group psychotherapy service.

Individualized, structured training programs that utilize established behavioral learning principles can teach schizophrenic patients both instrumental and affiliative skills.

Some of the learning principles that are structured into a skills training program are behavioral rehearsal, positive reinforcement, shaping, prompting, modeling, homework, and in-vivo practice. The program is designed so that patients repeatedly perform a particular skill and receive much positive reinforcement. Shaping is done by giving positive feedback for small increments of change in skill level. The therapist provides considerable prompting and coaching. Videotapes provide modeling of the skills, and homework and in-vivo practice bridge the gap between the clinic or hospital setting and the patient's natural environment. Figure 4 is a flow chart showing the structured procedure for teaching a particular skill using role-playing and other active training techniques.

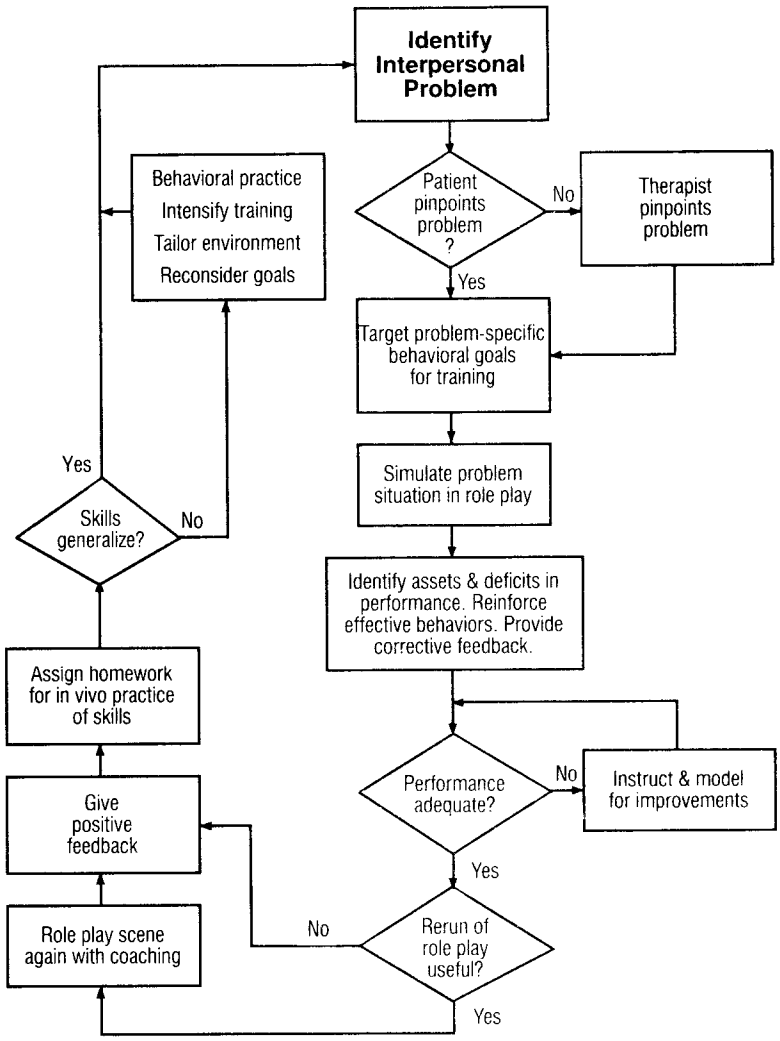

Figure 4. Flow chart of social skills training procedure.

Effectiveness of Social Skills Training

Given the considerable effort necessary to implement a social skills training program, questions about its effectiveness, durability, and generalizability are reasonable. Well-controlled studies have shown that patients with chronic schizophrenia can learn a variety of functional social skills and maintain these skills over time.

Durability of skills training. When skills training is intensive and extensive, skills do not weaken substantially with the passage of time; however, booster sessions are desirable. In a study conducted by our group at

Camarillo State Hospital, patients were randomly assigned to receive either social skills training or a holistic therapy program that included art therapy, jogging, and meditation.[1] The holistic therapy was credible to the patients and actually resulted in significant symptom improvement during the inpatient period. Patients' skill levels were measured through a role-playing test that was conducted before therapy, immediately at the end of the 3-month program, and at a 9-month follow-up. Patients who received social skills training showed a large increase in appropriate skills displayed during the role-playing test, even though these tests were conducted with situations novel to the patient (Figure 5). Furthermore, this increase was as apparent at the 9-month follow-up as it had been immediately after training. Patients who received the holistic therapy demonstrated little change in social skills at either the 3-month or the 9-month test.

When skills training is intensive and extensive, skills do not weaken substantially over time.

Generalizability of skills training. To enable patients to generalize their newly learned skills to novel situations, it is necessary to program for generalization during training. One has to anticipate the environments that the patient will encounter after the training is over. When that kind of anticipation and planning is built into the training program, there is good evidence that patients do transfer the newly learned skills into the natural environment. Patients in the study just described were asked to participate in a naturalistic conversation test outside the hospital and clinic with a person they had never met. Patients who had received the social skills training were significantly less hostile, less distracted, less submissive and inhibited, and more appropriate to the person engaging them in conversation than were the patients who had received the holistic therapy. Relatives of the patients who had received the social skills training also rated them, using the Katz Social Adjustment Scale, as much improved in areas related to the training.

Patients who participated in social skills training were better able to generalize their skills to a novel situation than were those who received holistic therapy.

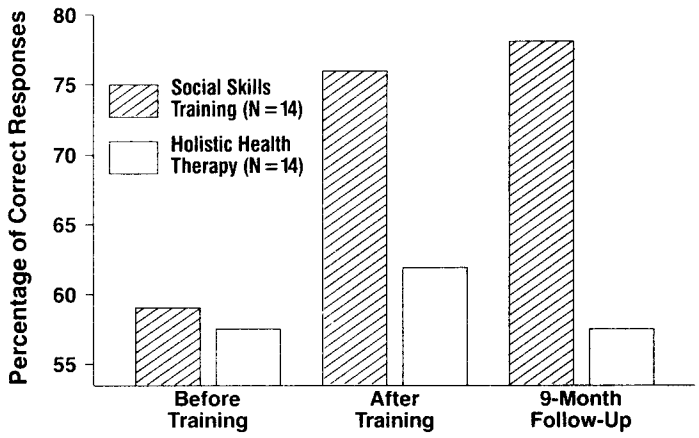

Figure 5. Percentage of correct responses on role-play test of social skills.[1]

Reciprocity between skills training and antipsychotic therapy. Skills training, coupled with pharmacotherapy, may actually reduce the risk of relapse in schizophrenic patients. Figure 6 illustrates the relapse rates from two studies that compared the combination of skills training and antipsychotic drug treatment with drug treatment without the skills training.[1,2] In both studies, the relapse rate after 9 to 12 months is approximately 20% in patients receiving the combination of skills training plus drug treatment, but is over 40% in patients not receiving the skills training.

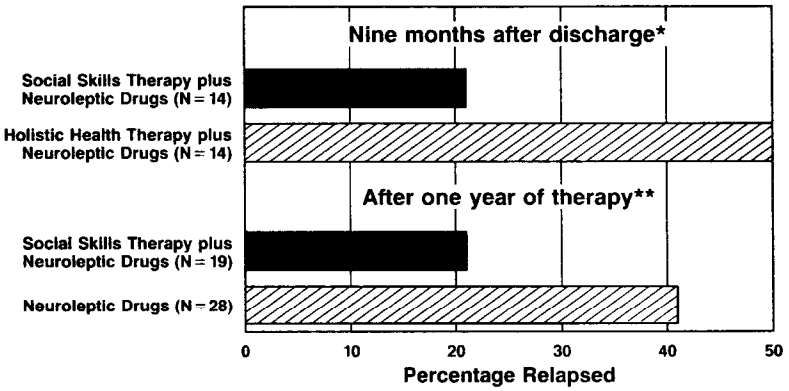

Figure 6. Relapse rates after various therapeutic approaches.
*Wallace and Liberman, 1985; **Hogarty et al., 1986.

There is also a suggestion that antipsychotic drug needs may be reduced in patients receiving skills training (Figure 7). In another study, patients were randomly assigned to receive either individual therapy or skills training in a family context.[3] All patients were maintained on antipsychotic medication throughout the study. Over a 2-year period the average antipsychotic drug dose, expressed in chlorpromazine equivalents, for patients given the family skills training was 100 mg less on average than for those given individual therapy.

Antipsychotic drug needs may be reduced in patients receiving skills training.

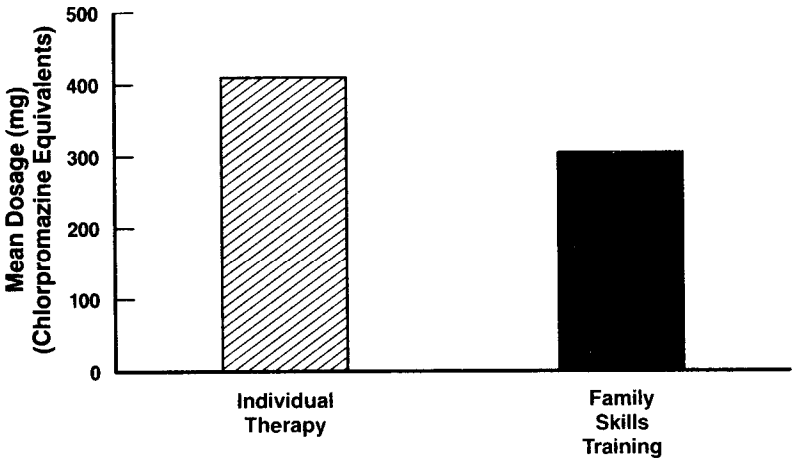

Figure 7. Antipsychotic drug requirements during individual therapy and family skills training.[3]

Data from these studies suggest that there may be a reciprocity between the protective benefits of antipsychotic drug treatment and those of skills training.

Supportive Family Environment

Despite the best treatment and rehabilitation efforts, some patients still have persistent symptoms and disabilities. For these patients, attention must be given to supportive living environments that can help compensate for unyielding impairments and/or disabilities.

Behavioral family management is a family-based effort that not only teaches skills to members but also works to reduce stress and make the family a more supportive environment for the schizophrenic patient. There are three elements to behavioral family management: education about the nature and management of schizophrenia, training in verbal and nonverbal communication skills, and training and practice in effective problem-solving skills. Although the methods employed in behavioral family management are similar to those used for other skills training areas, a distinction is that both the patient *and the family* participate in the systematic process of reducing problems and stress.

Research indicates that families can learn problem solving (Figure 8).[4] In a study by Falloon and colleagues, families exposed to behavioral family management training were significantly better able to solve problems 3 months after the program began than were families who received only individual therapy. Improvements in problem-solving capacity were highly predictive of a full spectrum of positive clinical outcomes including symptom remission, reduced likelihood of relapse, higher levels of social functioning, and reduced family burden.[5]

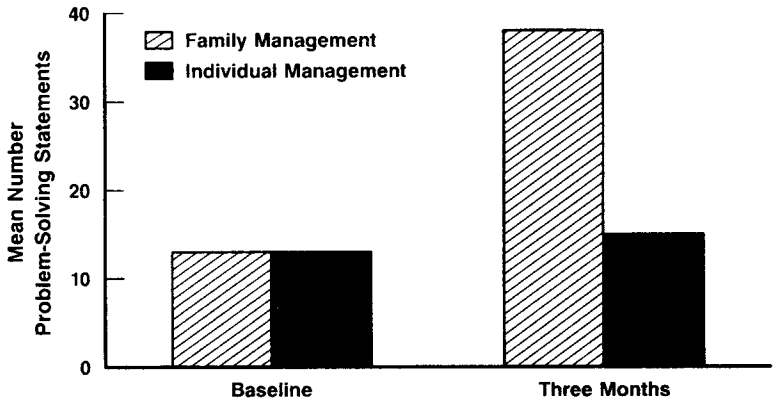

Figure 8. Durability of problem-solving behavior after family management and individual management.[4]

Behavioral family management teaches skills to family members, and works to make the family a more supportive environment for the schizophrenic patient.

Great inroads have been made in developing rehabilitative techniques that improve the social skills, occupational status, independent living, and quality of life of schizophrenic patients. These techniques, combined with antipsychotic medication, may reduce the likelihood of relapse.

Conclusion

When antipsychotic medications became available as therapy for schizophrenia, patients were able to be discharged from the hospital and returned to society. Unfortunately, for most patients these drugs did not allow them to return as productive members of society. Although antipsychotic medication effectively controls psychotic symptomatology, it does nothing to ameliorate the cognitive deficits inherent in schizophrenia. In the last decade, great inroads have been made in developing rehabilitative techniques that improve the ability of schizophrenic patients to function in society. Evidence is mounting that these techniques, combined with antipsychotic medication, reduce the likelihood of relapse as well. By adopting a comprehensive approach to the treatment of schizophrenia that combines pharmacologic and psychosocial methods, we will be able to effect not only improvements in psychotic symptoms but also improvements in social skills, occupational status, independent living, and quality of life for our patients.

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