Designing New Psychosocial Treatments for Schizophrenia

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SCHIZOPHRENIA is a disease characterized by cognitive, psychophysiological, and interpersonal deficits that result in a marked vulnerability to stress (Dawson and Nuechterlein 1984; Nuechterlein 1977; Strauss et al. 1987). Episodes of illness occur in vulnerable individuals who experience stressful life events (G. W. Brown and Rutter 1966; Lukoff et al. 1984) or stressful interactions with family members (G. W. Brown et al. 1972; Imber Mintz et al. 1987; Leff and Vaughn 1985). Similarly, overstimulating therapeutic environments have been shown to exacerbate psychosis (Drake and Sederer 1986; Liberman 1982; Linn et al. 1980; Van Putten 1976). A full understanding of disease-specific deficits resulting from stress and vulnerability is necessary for developing psychosocial treatment programs that augment pharmacotherapies in significantly ameliorating the symptoms and disabilities of schizophrenia.

While measurement of putative vulnerability markers of schizophrenia have become increasingly sensitive and precise, the clinical validity of these measures is not readily apparent. How do research findings describing cognitive and psychophysiological dysfunctions in schizophrenia relate to the psychopathology and disturbances in interpersonal adjustment seen in the disorder? The pathophysiology of schizophrenia may be illuminated by viewing a functional information-processing system as necessary for the accurate and realistic reception and processing of social information. Subclinical cognitive deficits may hamper the development of social perception, appropriate social judgment, and sociability during childhood, adolescence, and young adulthood.

Similarly, abnormalities in the regulation of the autonomic nervous system may lead to chronic hyperarousal, which can diminish the threshold beyond which stressors overwhelm the individual. These cognitive and autonomic dysfunctions may interact to impair the vulnerable individual's ability to process social information (Gjerde, 1983). As a result, when common, everyday interpersonal events and frustrations exceed the schizophrenic's coping capability, the individual may become overaroused and experience social situations as more confusing and stressful. Cumulative minor stressors or major life events can breech the psychobiological vulnerability threshold of a person with schizophrenia, provoking the relapse of psychotic symptoms.

Diminished protection against the noxious effects of social stressors is also apparent in vulnerable patients who manifest the negative syndrome, and who

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withdraw from social interactions and demonstrate anergia, and alogia (Andreasen 1982; Crow 1980). Poor premorbid adjustment may be a precursor to the negative syndrome. Unable to cope well within interpersonal situations, the negative syndrome schizophrenic withdraws from others.

Since schizophrenic vulnerability comprises a psychobiological hypersensitivity to socioenvironmental stressors, exacerbation of schizophrenic symptoms often results from a lack of protective factors that might buffer the impact of environmental stressors on a vulnerable person (Dobson and Neufeld 1989). Protective factors include a range of interpersonal and coping skills as well as a social support network comprising family, friends, and neighbors. Psychosocial treatments may confer protection against relapse by assisting schizophrenic patients to acquire and use social and independent living skills that can be incorporated into their behavioral repertoires (Liberman, Lillie et al. 1984). Case management, psychoeducational and behavioral family interventions, transitional employment, and supportive housing represent strategies that offer social support that also can protect a vulnerable individual from ambient stressors in the community. Thus, a stress-vulnerability-coping-competence model for understanding schizophrenia may serve as a road map to guide clinicians in their search for new and effective treatments (Liberman et al. 1986). One avenue of treatment development that has yielded effective interventions for schizophrenia is *social skills training*.

A Psychosocial Rehabilitation Model

Before launching a program of social skills training, it is necessary to design an intervention that (1) conforms to the stress-vulnerability-coping-competence model of schizophrenia; (2) harnesses human learning principles; and (3) targets the specific components of socially skilled behaviors. Liberman, Wallace, and their colleagues at the UCLA Clinical Research Center for Schizophrenia and Psychiatric Rehabilitation have created a technology for training social skills that incorporates these three design criteria (Liberman et al. 1989). Beginning in the early 1970s, this interdisciplinary team crafted a method of training social skills in a broad array of mentally ill persons attending a community mental health center that utilized individual goal setting, instructions and prompts, role playing, modeling, performance feedback, contingent reinforcement, coaching, and *in vivo* assignments (Liberman et al. 1975). These training elements derived from operant and social-learning principles that were employed in a structured, consistent, and systematic manner to overcome patients' learning disabilities (Bandura 1969; Goldstein 1981; Skinner 1953).

In a further step at targeting goals and skills that were particularly relevant to schizophrenics at risk for relapse, Liberman and his colleagues at the Bethlem-Maudsley Hospital in London included family members who were high on "expressed emotion" in educational and training sessions aimed at improving family communication and problem-solving skills (Falloon et al. 1981; Liberman, Lillie et al. 1984). Under the stress and burden of living with a relative who exhibits the unpredictable symptoms, disturbing behaviors, and disability of chronic schizophrenia, family members attempt to cope by becoming excessively nurturant or emotionally involved, on the one hand, or alternatively, by failing to recognize that a bonafide mental illness exists and thus criticizing the person with schizophrenia for performance deficits (Imber Mintz et al. 1987). These counterproductive efforts at coping with stress, termed high "expressed emotion," are in turn stressors for the mentally ill relative, thereby increasing the risk of relapse. To reduce stress-induced relapse, Liberman and his colleagues equipped three schizophrenic

patients with social skills in daily 4-hour training sessions for 2 months that enabled them to more assertively individuate from their families (Liberman, Lillie et al., 1984). In addition, the patients and their families met together twice weekly for 2 months and learned communication and problem-solving skills (Falloon et al., 1981). Collectively, the patients' and relatives' coping efforts became more effective, high "expressed emotion" was reduced, and in subsequent controlled studies, 1- and 2-year relapse rates were markedly reduced (Falloon et al. 1985; Liberman et al. 1986).

The skills-training technology further evolved in a 1979–1981 study by Wallace and Liberman (1985) wherein patients living with relatives who were high on "expressed emotion" participated in daily sessions for 3 months that aimed to improve the social perception and social problem-solving skills of schizophrenics. Prior to this development, the information-processing deficits of schizophrenics had not been taken into account in social skills training, which mainly had emphasized teaching patients improved verbal and nonverbal responses. The treatment research team at the UCLA Clinical Research Center hypothesized that the durability of skills and their generalization to the natural environment would be strengthened if patients were taught to identify and recognize interpersonal problems, and to generate alternatives for dealing with these problems, as well as to use appropriate verbal and nonverbal responses when coping with these problems.

As shown in Table 1, this stage of developing a technology for skills training led to a three-phase conceptualization of socially relevant skills, divided into "receiving," "processing," and "sending" skills (Wallace 1982; Wallace et al. 1980, 1985). Attending to appropriate social cues and accurately encoding the stimuli for their social meaning comprised *receiving skills*. Reception of social information is a complicated process; it requires careful listening to the content of messages, interpreting emotions, getting clarification, and determining the relevance of one's own behavior to the message (Bellack and Hersen 1978; Wallace et al. 1980). *Processing skills* described the individual's interpretation of the received information and generation of response alternatives that may fit the situation and facilitate coping. *Sending skills* described the range of behaviors necessary to successfully carry out the selected coping response. Sending skills encompass topographic behaviors such as speech content, paralinguistic elements (e.g., voice pitch), and nonverbal behavior (e.g., eye contact, facial expression, interpersonal distance).

Dividing an individual's repertoire of instrumental and affectional behaviors into receiving, processing, and sending skills provided clear target goals for social skills training. Moreover, this component approach to skills training was built on research findings that showed relationships of deficits in sustained attention and problem solving with interpersonal skills in schizophrenia (Liberman et al. 1982).

Modular Training Strategies

While the introduction of an information-processing approach to training social skills represented a definite advance with demonstrated effects on durability and generalization of the skills that were learned by schizophrenics (Wallace and Liberman 1985), three major obstacles still existed to the widespread dissemination and utilization of skills-training methods in the treatment and rehabilitation of the seriously mentally ill. One of the obstacles was the need to teach a wide variety of skills to individuals who were deficient in a host of areas of community functioning, especially those skills necessary to control and stabilize psychotic symptoms that often interfere with schizophrenics' learning. With the addition of a performance site for the Clinical Research Center in 1981 at the Brentwood VA Hospital that permitted longitudinal rehabilitation of veterans with schizophrenia, it became feasible to consolidate the

Table 1

EXAMPLES OF RECEIVING, PROCESSING, AND SENDING SKILLS

Receiving Skills	*Processing Skills*	*Sending Skills*
I see the man walking towards me with a knife in his hand.	The man approaching me with the knife may try to rob me.	
I hear the police car siren in the distance.	My alternatives to being robbed include: yelling for help, flagging a police car, running.	I yelled for help and waved my arms to stop the police car.
I see a girl sitting alone in the dance hall.	The girl staring at me in the corner may want me to ask her to dance.	
I hear the music in the dance hall.	My alternatives at the dance are: ask the girl to dance, ask someone else to dance, go to the refreshment table instead.	I asked the girl to dance by approaching her, making eye contact and saying in a pleasant voice, "I'd like to have the next dance with you."

learning principles and technology into a modular approach for training a broad spectrum of social and independent-living skills. This further evolution of the UCLA skills-training program included two modules that were directly aimed at teaching patients to become more responsible and reliable consumers of maintenance medication and psychiatric intervention: the Medication Management and Symptom Management modules.

Each module is a curriculum for teaching a particular area of skills required for survival and adaptation in the community. These include instrumental skills such as medication self-management, symptom self-management, money management, and job finding as well as affiliative skills such as basic conversation and friendship and dating. Each module is divided into a series of "skill areas," like chapters of a book, that encompass specific educational objectives and desired behaviors. For example, in the fourth skill area of the Medication Management Module, which is entitled "Negotiating Medication Issues with Health Care Providers," patients learn how to describe to their physician their specific side effects with clarity and in sufficient detail, while using assertive and friendly communication skills. The subjects and skill areas for five of the modules produced by the UCLA Clinical Research Center are listed in Table 2. Each skill area of each module is taught using the same, highly prescribed sequence of seven structured learning activities, as shown in Table 3.

Two other advantages of the modular approach to skills training have enabled the innovators to overcome obstacles to dissemination of this technology related to practical constraints; namely, local programmatic constraints in adopting an innovation and difficulty in training the trainers. The modular design of the UCLA skills-training program permits any institution or community-based program to literally "plug in" one or more of the modules into existing programs, without having to demolish other elements of the program that are serving patients well. No wholesale renovation of a clinical enterprise is necessary since the modules are relatively "free standing" and compatible with a wide range of clinical and theoretical orientations. Previously validated psychosocial and behavioral treatment and rehabilitation programs – such as the Fairweather Lodge, the Fountain House Psychosocial Club, and the Token Economy–Social Learning Program – suffered limited dispersion because they required major restructuring of existing programs (Backer et al. 1986).

Table 2

THE SKILL AREAS AND GOALS OF THE FIVE UCLA MODULES FOR TRAINING SOCIAL AND INDEPENDENT LIVING SKILLS

Skill Areas	*Goals*
*Skill Areas for Medication Management**	
1. Obtaining information about antipsychotic medication.	To gain an understanding of how these drugs work, why maintenance drug therapy is used, and what benefits result from taking medication.
2. Knowing correct self-administration and evaluation of medication.	To learn appropriate procedures in taking medication, and how to evaluate responses to medication daily.
3. Identifying side effects of medication.	To learn the side effects that sometimes result from taking medication and what can be done to alleviate these problems.
4. Negotiating medication issues with health-care providers.	To practice ways of getting assistance when problems occur with medication; for example, how to call the hospital or doctor and how to report symptoms and progress.
5. Using long-acting injectable medication.	To desensitize fears of injections and learn benefits of biweekly or monthly injectable medication.
*Skills Areas for Symptom Management**	
1. Identify warning signs of relapse.	To learn how to identify personal warning signs and monitor them with assistance from others.
2. Managing warning signs.	To learn to use specific techniques for managing warning signs and develop an *emergency plan.*
3. Coping with persistent symptoms.	To learn how to recognize persistent symptoms and use techniques for coping with them.
4. Avoiding alcohol and street drugs.	To learn about the adverse effects of alcohol and illicit drugs, and how to avoid them.
*Skills Areas for Recreation for Leisure**	
1. Identifying benefits of recreational activities.	To identify the benefits of various recreational activities and choose activities based on the benefits sought.
2. Getting information about recreational activities.	To locate and gather facts about different kinds of recreational activities and follow up on how to use the activities.
3. Finding out what's needed for a recreational activity.	To identify the resources needed before starting an activity.
4. Evaluating and maintaining a recreational activity.	To judge whether an activity is enjoyable and worth continuing on a long-term basis; to make a long-term plan for engaging in the activity.
*Skill Areas for Basic Conversational Skills**	
1. Active listening skills.	To learn effective verbal and nonverbal listening techniques.
2. Initiating conversations.	To learn the most likely places to meet people and how to determine whether another is willing to engage in conversation.
3. Maintaining conversations.	To learn the techniques that sustain conversations.
4. Terminating conversations.	To learn how to end conversations graciously.
5. Putting it all together.	To integrate all skill areas into natural and spontaneous conversations.

Skill Areas for Grooming and Self-Care

Section I	
1. Techniques of bathing.	To learn the benefits and techniques of bathing; to learn the resources necessary for good personal hygiene.
2. Dental care.	To learn the proper care of teeth and/or dentures and the benefits of good dental care.
3. Knowing the techniques of proper hair care.	To learn the proper method of combing and brushing hair; to learn the importance of effective hair care.
4. Knowing the various methods of shaving.	To learn to benefits of shaving; to learn to protect the skin while shaving.
5. Knowing the importance of proper foot care.	To learn how to purchase shoes correctly; to learn how to care for foot problems, especially for diabetics.
Section II	
6. Knowing effective care of clothes.	To learn the techniques for washing, drying, and ironing clothes; to learn how to make minor clothing repairs.
7. Women's issues.	To learn how to maintain effective feminine hygiene; to learn the correct method of breast self-examination.
8. Dress for the occasion and coordinate colors.	To learn how to coordinate colors, fabrics, and styles for a variety of occasions; to learn how to economize when purchasing clothes.

Note. Modules followed by asterisks have been fully developed and are available from: The Dissemination Coordinator, Clinical Research Center for Schizophrenia and Psychiatric Rehabilitation, Camarillo State Hospital, Box 6022, Camarillo, CA 93011-6620.

Another obstacle that had to be overcome for widespread distribution and use of skills training was the time-consuming requirements for "training the trainers." In over a decade of training psychiatric residents and psychology interns, Liberman and his colleagues were able to graduate only a few dozen competent skills trainers. Competence and confidence in using the more generic approaches to social skills training took apprentices approximately 3–5 months of weekly sessions under the tutelage of a mentor and role model. With the skills training encap-

Table 3

LEARNING ACTIVITIES USED BY TRAINERS TO FACILITATE THE ACQUISITION OF SKILLS BY PATIENTS

1. Introduction to skill area	Introducing the topic and component skills required for managing your medication safely and effectively.
2. Videotape and questions/answers	Viewing the videotape scene and demonstrating assimilation of knowledge of skills, with question-and-answer review.
3. Role-play	Acting out the skills in behavioral rehearsal.
4. Resource management	Discussing the resources needed to perform the skills.
5. Outcome problems	Solving problems associated with using the skill.
6. *In vivo* exercises	Performing exercises in real-life situations with health-care providers, in settings outside the training class.
7. *Homework assignments*	Completing assignments away from the group.

sulated in a modular format, including a prescriptive manual for trainers or therapists and a professionally produced videocassette to demonstrate the skills to patients. trainees from all the mental health disciplines could learn faithful delivery of the skills to patients with only 8-12 hours of exposure and practice.

Since more and more of the direct care of chronic mentally ill patients is assumed by paraprofessionals who do not have the graduate education necessary to implement complex methods (Graziano and Katz 1982), the prescriptive form of the module is "user friendly." The modules are written in a step-by-step manner such that only minimal effort is required to plan and conduct the training sessions for each day. Moreover, the specific prescriptions outlined in each module's *Trainer's Manual* make it possible for one trainer to carry out a module on Monday and have a second trainer pick up where the class left off the next day. Moreover, patients can begin the module as inpatients and continue with their learning as outpatients. Module skills-training packages are easily monitored and evaluated, a necessary requirement for quality assurance, treatment outcome research, and program evaluations.

The UCLA modules specify seven learning activities that trainers use to facilitate patients' skill acquisition (Wallace et al., 1985). First, an *introductory* learning activity briefly reviews the behaviors that will be taught in the skill area and builds motivation for patients to participate actively in the learning activities that follow. This introductory step serves as an advanced organizer, preparing the patient for *videotape* presentation of the skill area and a subsequent *question-and-answer* period. The videos are professionally made, with actors taking the part of patients modeling the skills targeted for training, with clear annotation by narrator and text subtitles to compensate for patients' cognitive deficits. The question-and-answer segment facilitates both the assessment and the subtle shaping of receiving skills.

Once the patients have observed the model demonstrate the skills on the video, they have an opportunity to practice the skill in *role-plays*. This learning activity assesses both processing skills (What different alternatives are possible to address this role-play?) and sending skills (How successfully did the individual incorporate paralinguistic and nonverbal components in the role-play?). Processing and sending skills are increased to a criterion performance level via trainer prompts and feedback. Performance feedback and learning can be enhanced by making video-recordings of the behavior rehearsals and playing back the video to allow the individual, and the group as a whole, to offer comments about the performance. Group members are instructed to give positive comments ("What did you like about the way that John handled that task?") and avoid the aversive impact of criticisms.

In addition to being able to perform the requisite skills, individuals must learn to garner necessary "resources" to accomplish the targeted instrumental or affectional goal. *Resource management*, the next learning activity, assists patients to understand what is a resource, identify the range of resources necessary to attain a specific goal, and figure out how to obtain resources. For example, resources necessary to arrange a doctor's appointment include a phone directory, a telephone, a calendar, and a pad of paper. Individuals who do not have their own phone can overcome this shortcoming with a quarter and use of a public phone.

Despite mastery of the targeted skills and the presence of sufficient resources, several unforseen obstacles may arise as barriers to future performance of learned skills. The *outcome problems* learning activity introduces the patient to stepwise problem solving necessary to overcome unexpected barriers. For example: What should the patient do who calls the doctor's office for an appointment and gets repeated busy signals, listens to an automated message from a machine, or is told that the doctor's receptionist is away from her desk? In this learning activity, aspects of the barrier are identified (receiving skills) and alternative methods that

may remove the barrier are brainstormed (processing skills). For example, the patient can call back, ask to make an appointment with someone other than the receptionist, or call another doctor for an appointment. From these alternatives, the patient is instructed to pick a solution with the proviso that one choice is not necessarily superior to another. If it later fails, choosing a second option is a reasonable alternative. The solution is then carried out in role-play fashion for further training of verbal and nonverbal sending skills.

A variety of strategies to promote generalization of skills acquired in therapeutic environments have been designed for the modular form of social skills training (Corrigan et al. 1992; Liberman et al. 1982; Morrison & Bellack 1984). These include the problem-solving techniques embedded in the "Resource Management" and "Outcome Problem" learning activities of each module. Two final learning activities are also directed at improving the transfer of skills to novel, untrained situations. *In vivo* training requires the patient to carry out the newly acquired skills in real-life, individually meaningful situations with the trainer present to aid the person, should a barrier become insurmountable (Liberman, Lillie et al. 1984). After the patient is able to implement the skills without ancillary assistance, *homework* is assigned to independently carry out the practiced skill in other real-life settings. Patients who are able to carry out the homework "pass" the learning criteria for the particular skill area of each module.

Skills Training and the Schizophrenic's Cognitive Deficits

Formal thought disorder and distractibility can interfere with the patient's participation in skills-training modules. Several strategies that can help to overcome these difficulties and thereby improve the patient's learning capacity, are listed in Table 4. In general, instructional techniques used in the field of special education for the learning disabled may be an apropos analogy for psychosocial rehabilitation strategies with incoherent and distractible patients. For example, an attention-focusing approach has been used to improve social skills training with cognitively disordered patients (Liberman et al. 1986; Massel et al. 1991). This approach is characterized by multiple, relatively short, attention-training training sessions embedded within more traditional social skills training modules. During these sessions, if the patient provides either no answer or an incorrect response to an "opener" made by a confederate, then the trainer models the correct response and then prompts the patient to try again to respond. Correct responses are praised and reinforced with suitable material and social rewards. Thought-disordered patients who may be initially ineligible to participate in the classroom format of the modules may achieve "mainstreaming" after intensive training in attention focusing.

Diminishing environmental background noise can improve skill learning as well. Patients are easily distracted by events occurring around them. Thus, training rooms should be relatively quiet and set aside from clinic areas where traffic, interruptions, or other distractions are frequent. We have found that module sessions ideally should be scheduled on a twice weekly basis or more frequently to maximize learning effects and diminish the adverse impact of the short-term memory problems exhibited by schizophrenics (Liberman and Green 1992). When working with outpatients whose transportation problems obstruct frequent attendance at a clinic or mental health center, training might be fruitfully "exported" to the patients' residential settings since the modules are portable and require only a VCR and video monitor. Alternatively, transportation by van service can often achieve the desired regularity of attendance that will help to copensate for the cognitive deficits that can impair leaning.

Evidence is accumulating that deficits in memory, sustained attention, and selective attention may be "rate-limiting" fac-

Table 4

REMEDIAL STRATEGIES FOR SOME COGNITIVE DEFICITS OF SCHIZOPHRENIA

Cognitive Deficit	*Remedial Strategy*
1. Hyperaroused by overstimulating milieu.	Diminish external distractors, ambient noise, likely interruptions.
2. Difficulty sustaining attention over time.	Keep training tasks brief and focused. Use frequent prompts to regain attentional focus. Use incentive program and self-management to improve prearranged attention goals.
3. Distracted by irrelevant cues.	Keep training site uncluttered of stimuli not germane to modular skill areas.
4. Misinterpret learning points.	Post charts that explain skill areas.
5. Difficulty with speeded tasks.	Proceed slowly through training steps.
6. Easily overloaded by complex tasks.	Conduct task analysis and break tasks down into simpler substeps.
7. Influenced by immediate stimuli in the environment.	Avoid accidental pairing of extraneous variables by providing immediate feedback and reinforcement. After overlearning has occurred, gradually fade feedback and reinforcers.
8. Distracted by hallucinations and poor associations.	Adopt thought-stopping techniques. Self-monitor disordered thought and hallucinations and avoid stressors that may exacerbate them.

Note. Elements of this table were adapted from Liberman et al. (1982).

tors in the success and efficiency of skills-training programs, such as the UCLA Social and Independent Living Skills modules (Bowen 1988; Corrigan and Storzbach 1992). Thus, future research should be directed to answering the question "Can social skills training, utilizing the modular approach developed at the UCLA Clinical Research Center, be demonstrated to have a salutary effect on the cognitive deficits of persons with schizophrenia?" Whether it is more efficient to overcome cognitive deficits before having a schizophrenic person enter a skills-training program (as in the previously described attention-focusing method) or whether skills training itself can improve cognitive functioning must await the next generation of studies in psychosocial treatment development.

One issue that has been raised questions the utility of a problem-solving emphasis in the UCLA modules (Bellack et al. 1990) since normal individuals do not consciously utilize the step-by-step sequence inherent in the problem-solving training. However, abundant evidence exists showing that schizophrenics lack problem-solving ability (Donahoe et al. 1990) and that episodes of relapse appear to produce a regression in schizophrenics' problem-solving abilities (Sullivan et al. 1990). Just as a stroke victim undergoing physical therapy must learn to use a cane or walker in order to resume ambulation skills, persons with schizophrenia may also need the "cognitive prosthesis" of the deliberate and systematic application of the problem-solving steps to negotiate the sometimes stressful pathways of everyday life in the community. An "artificial" support, like using the problem-solving steps, may make the difference between community adjustment or institutionalization for persons with cognitive impairments. Evidence from the UCLA Clinical Research Center suggests that schizophrenics can indeed improve their problem-solving ability when exposed to training through the medium of the Interpersonal Problem-Solving Module (Eckman 1992).

MODULE CONTENT AREAS

Five modules have thus far been produced and these are summarized in Table 2. Each module package includes a video-

tape, trainer's manual, user's guide, and patient's workbook. Although usable in individual therapy, modules are customarily taught in a classroom setting with 1–2 trainers and 5–10 patients. The trainer's role is very different from the nondirective stance common in traditional psychotherapy. Specific feedback and active prompting are essential intervention strategies that require trainers to get out of their chairs and become actively involved in the learning process, similar to an athletic coach or teacher in a special education classroom. To accomplish this task, trainers need a sufficiently large room, videocassette recorder and camera, chalkboard, pencils, and paper to conduct the class. Modules are divided into four or five skill areas and can be completed in about 30 hourly sessions. Typically, individuals who have not mastered the skills after progressing through a module repeat skill areas in which they were deficient. An assessment instrument, the Independent Living Skills Survey (Wallace 1986), is used as a companion to the modules since it permits clinicians to determine, in advance, which modules and skill areas patients are deficient in.

Evaluation of Modules

Investigations have shown that the UCLA Modules are effective in improving the acquisition of targeted skills (Wirshing et al. 1991). For example, the Medication Management Module has been tested in 28 field sites across the United States (Eckman et al. 1990). Results revealed that patients completing the module significantly increased their compliance with medication regimens, their knowledge of medication effects, and their ability to negotiate with health professionals on medication issues. More recently, Wallace and his colleagues (1992) found that training on four modules substantially increased patients' knowledge and performance on these skills. One-year follow-ups revealed retention of the skills.

Moreover, results from this controlled field test of the modules showed that even nonprofessionals—such as operators of board and care homes who had only a high school education—could effectively deliver the training as long as they followed the stepwise procedures in the training manual. In one residential care facility where the operator skipped over some of the module learning activities, patients failed to acquire the skills. In another study of the Medication and Symptom Management modules, patients showed significantly greater acquisition, durability, and generalization of the skills than their counterparts who were randomly assigned to the same amount of supportive group therapy. In addition, even moderately high levels of positive and negative symptoms did not appear to significantly impair the learning effects of these patients (Eckman et al. 1992).

Summary

The UCLA modules provide an efficient, easy-to-apply package for facilitating the acquisition of social and coping skills. Patients who complete social skills training increase specific interpersonal skills (M. A. Brown and Munford 1983; Fecteau and Duffy 1986; Field and Test 1975; Goldsmith and McFall 1975) as well as problem-solving skills that provide a more flexible response set for coping with future social situations (Hansen et al. 1985; Wallace and Liberman 1985).

Improved behavioral repertoires resulting from social skills training have led to higher levels of social functioning (Liberman, Falloon et al. 1984; Wallace and Liberman 1985) and decreased likelihood of relapse (Hogarty et al. 1988). However, research findings regarding the long-term durability and generalization of skills-training effects suggest that intermittent booster sessions may be necessary and that a better understanding of schizophrenics' neuropsychological deficits may yield improvements in training technology. Nevertheless, social skills training provides a valuable and empirically documented intervention that is now ready to be incorporated into the treatment armamentarium for schizophrenia.

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