

Problem-Solving Skills for Cognitive Rehabilitation Among Persons With Chronic Psychotic Disorders in Italy

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Studies have shown that teaching persons with mental illness to identify and cope with their real-life problems yields substantial clinical improvements. In Italy a structured problem-solving group was established in a day treatment center in 2003. This column describes the approach and focuses on the outcomes achieved by 15 patients with severe mental illness who were in this group. After completion of the problem-solving program, significant improvements were noted in symptom scores on the Positive and Negative Syndrome Scale and in problem-solving and neurocognitive test performance, with further improvements six months after completion of the group sessions. Problem-solving training may contribute to improved neurocognition and symptoms. (*Psychiatric Services* 57: 172–174, 2006)

Introduction by the column editor:

With the growing evidence that neurocognitive capacities are linked to psychosocial functioning among persons with severe mental illness, stud-

ies have begun to test the malleability of such capacities through training of basic brain mechanisms, such as verbal learning and memory, sustained attention, social perception, and decision making. A variety of approaches to cognitive rehabilitation have emerged (1) and can be broadly demarcated as “top-down” and “bottom-up” modes of training. In bottom-up designs, discrete brain mechanisms are trained by using computer presentations (biofeedback), and the effect of the training is evaluated by examining the person’s level of psychosocial functioning. In the study described in this Rehab Rounds column, a treatment research group from Italy used a top-down intervention to evaluate how teaching naturalistic problem-solving skills affected patients’ basic cognitive capacities. This preliminary study has wide generalizability, because many interventions used in psychiatric rehabilitation include training in problem solving among their constituent techniques: social skills training, cognitive-behavioral therapy, behavioral family therapy, and assertive community treatment (2). Thus teaching patients with disabling mental disorders to solve their everyday problems may show benefits on more focal cognitive activities.

Numerous studies have shown that teaching persons with mental illness to identify and cope with their real-life problems yields substantial clinical improvements in in-

terpersonal and instrumental roles and in psychopathology and relapse prevention (3,4). Salutory clinical benefits have been documented in depression and bipolar disorder, schizophrenia, generalized anxiety disorder, and borderline personality disorder. In Italy, where the prevailing therapeutic philosophy is nondirective encouragement of emotional insight and explanation of the etiology and maintenance of symptoms, a highly structured problem-solving group training course was established in day treatment centers in the province of Verona (the Centro Diurno 5, or CD5). These groups have become a popular and ongoing feature of the planned and scheduled activities of this and other centers in the Veneto region. This report focuses on the outcomes achieved by 15 patients who completed this course, 80 percent of whom had schizophrenia.

Problem-solving program

Groups of six to eight patients with schizophrenia and other severe mental disorders participate in the problem-solving program, and training is organized in four phases during 24 sessions. The weekly sessions last 90 minutes each, and each phase focuses on teaching skills for dealing with problems of increasing complexity: practical problems (for example, buying clothes and food, cooking meals, and finding housing), interpersonal problems (for example, making friends), residual symptoms (for example, difficulties expressing feelings

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and overcoming apathy), and coping with distressing events and emotions that interfere with personal functioning. Patients begin by identifying their real-life problems—that is, obstacles that stand in the way of achieving their personal goals.

For each problem covered in each of the phases, patients are taught to use a systematic, repetitive, sequential, six-step problem-solving method with guide-sheets that were designed and effectively used in a countywide mental health system and an outpatient clinic of the U.S. Department of Veterans Affairs (5,6). The six steps include identifying the specific problem and goal, listing all possible solutions, highlighting the main advantages and disadvantages of each possible solution, choosing the most practical solution, planning exactly how the solution will be carried out, and reviewing progress and revising the plan as needed.

Each group session starts with a brief presentation of the goals of the session and a rationale for learning how to solve one's problems, followed by practice using role playing, coaching, modeling, cognitive restructuring, and social reinforcement. After practicing problem solving for designated, real-life problems, patients are given homework assignments to put what they have learned into effect. Most reported using the problem-solving method successfully in their everyday life. Using a directive manner, group leaders solicit participation at each step of the process from all group members. The leaders also encourage patients to use self-disclosure to share similarities in their problems and to participate interactively as each member goes through the problem-solving steps. Each group of six to eight patients is led by two therapists who function as teachers and may represent any of the mental health professions.

Case vignette

Mr. S was a 38-year-old single man who left school at the age of 16 and had been treated for disorganized schizophrenia for almost 20 years. Attempts to engage him in sustained rehabilitation had failed. He was living with his parents, spent most of the day in bed, seldom showered, and

had minimal interaction with his family. He had muddled thinking and took antipsychotic medication erratically. His scores on the Positive and Negative Syndrome Scale (PANSS) were 22 for the negative scale and 15 for the positive scale, and his Global Assessment of Functioning (GAF) score was 48. (Possible PANSS scores range from 4 to 28 on the positive scale and from 7 to 49 on the negative scale, with higher scores indicating more severe symptoms. Possible GAF scores range from 0 to 100, with higher scores indicating better functioning.) Initially he had difficulty paying sustained attention to the group process and required frequent, gentle prompts to make eye contact and to participate actively in the step that was currently under discussion in the problem-solving sequence.

As Mr. S received warm and spontaneous positive reinforcement from the leaders and other group members for success in going through the problem-solving steps, his social interest and attentiveness improved. As his scrutiny of other group members' participation increased, he showed the positive effects of vicarious, observational learning and became more actively involved in the group.

Mr. S's personal goals included using the local bus system, overcoming his fears of getting lost, asserting himself with people who made annoying requests for his money, and taking up painting, which had been his passion before his illness. While in the first phase of the program (practical problems), he decided to try cooking simple meals for his family. He was very pleased when this proved successful and was acknowledged with delight by his parents. With the help of a suggested solution by another group member, Mr. S purchased a map of the city and learned to use it to avoid getting lost. Success in his initial, limited bus excursions led to trips of greater distance and increased confidence in reaching destinations and recreational events in the city.

Mr. S's efforts to return to art were less rewarding, as he felt blocked by his anhedonia and apathy. In the problem-solving process, he was guided to take tiny steps in the direction of resuming artistic activities. For example,

he drew signs and informational posters for scheduled and daily events at the day treatment program, benefiting from the familiarity of the people and places and the limited and readily attainable goals. After meeting with initial success in this structured way, he volunteered to draw posters for local self-help and family advocacy organizations. For the first time in many years he was able to sketch pictures and to paint, albeit without his pre-morbid enthusiasm.

After four months of participating in the problem-solving group, Mr. S's medication taking was stable and he was initiating and completing his self-care and personal hygiene. He contributed to chores at home, which improved his morale and that of his parents. As his routine became more organized and self-directed, his mental status improved, as reflected by regular and prompt attendance at the day center, lengthier conversations, attentiveness in the group, and resumption of social contacts with an old friend. A six-month follow-up revealed maintenance of his personal gains and an interest in finding part-time work. His PANSS positive and negative symptom scores had been reduced by 30 percent, and his GAF score rose to 71. Neurocognitive tests showed improved orientation, sustained attention, and verbal memory and fluency.

Evaluation

To assess changes in symptoms, neurocognition and goal attainment, 15 patients were rated before and after their participation in two problem-solving groups. Patients participated in the groups in 2003. There were nine males and six females, with a mean \pm SD age 38.0 \pm 12.6 years. The mean duration of illness was 11.0 \pm 6.7 years. Disorders were diagnosed with *DSM-IV* criteria. Twelve participants (80 percent) had schizophrenic disorders, one (7 percent) had schizoaffective disorder, and two (13 percent) had borderline personality disorder. The evaluation of these patients was routine, so no institutional review board approval or informed consent was required. Collectively, they achieved 22 of 24 personally relevant goals. The goals for individual patients included a spectrum of behav-

iors: convincing friends to end their evening of socializing early enough so the patient could get his needed sleep, speaking openly with the psychiatrist about changes in medication, coping with upsetting situations assertively, cutting down on smoking, finding work, managing symptoms so they were no longer intrusive, and getting up from bed and attending appointments in a timely manner.

Significant improvements were noted in PANSS total, negative, and positive symptom scores from baseline to after completion of the 24 sessions of the program, with further improvements six months after completion of the program. An independent rater assessed each group member's problem-solving skills every second session and found significant improvements over the course of training.

Neurocognitive tests were conducted at baseline, after completion of the group sessions, and six months after the completion of the group sessions for members of the problem-solving group and for a nonrandomized contrast group of patients who participated in the day centers' arts-and-crafts occupational-therapy groups for the same duration. The two cohorts were matched for age, gender, education, initial severity of symptoms, and duration of illness. Compared with the contrast group, members of the problem-solving group had improved performances on most neurocognitive tests and had significantly greater improvements in working memory, verbal memory, and verbal fluency. Both groups improved significantly over time in selective spatial attention and verbal learning. On these tests, the members of the problem-solving groups reached the normal range of performance, which was measured by using Italian norms. [A table with the pre- and posttreatment PANSS scores and scores on the neuropsychology battery is available in the online version of this column at ps.psychiatryonline.org.]

Discussion and conclusions

Brief group training in structured problem solving that addresses the current, real-life challenges of patients with schizophrenia and other psychotic disorders may contribute to

improved neurocognition, social functioning, and symptoms. Because individualized goals were chosen from the beginning, patients were motivated to attend and participate in the group. Dropouts were nil. The personally relevant success of patients as they achieved meaningful goals boosted their morale and self-efficacy. Symptom reduction may have resulted from more constructive responses to problems, improved negotiation of medication regimens with psychiatrists, and better management of stress in daily life. Enhanced coping and competence achieved through the problem-solving process with attendant positive reinforcement may have lifted motivation and overall performance levels. The raised levels of motivation and active engagement in the real world could have strengthened general cognitive capacity, as reflected in the improved performance of patients on the neurocognitive tests.

Afterword by the column editor:

The demonstration of improved social problem solving accompanied by improvements in neurocognition for patients who were trained in structured problem solving is consistent with other recent, better controlled studies. For example, in a state hospital, Spaulding and colleagues (7) found improvements in neuropsychological tests among patients with very chronic schizophrenia after they had been given social skills training and integrated psychological therapy. Patients who participated for one year in a structured day treatment program showed significant improvements in verbal memory (8). In a randomized, controlled study, Silverstein and colleagues (9) documented significant improvements in verbal learning and memory, sustained attention, and working memory after 16 sessions of skills training in the Community Re-entry Module.

It is likely that the successful experiences of participants in the problem-solving groups were so personally relevant that they amplified participants' motivation and active efforts on the neurocognitive tests. Improved neurocognition in the top-down strategy of rehabilitation may

reflect a generalized increase in cognitive capacity. Immersion in competency-based learning—as well as in a diversity of rehabilitative services that have in common the provision of opportunities, encouragement, and reinforcement for successful experiences—should be studied in systematic, controlled research that can test for the effect on cognition, social functioning, and quality of life.

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