

SHORT-TERM FAMILY-BASED INTERVENTION WITH
SCHIZOPHRENIA: A CLINICAL OUTCOME STUDY

Kia J. Bentley, Ph.D., ACSW
School of Social Work
Louisiana State University

In the past few years, educational and behavioral family-based approaches to working with schizophrenic men and women have been and are being subjected to empirical testing with positive results in terms of reduced relapse and improved functioning on the part of the patient (Falloon, Boyd, & McGill, 1984; Anderson, Reiss, & Hogarty, 1986; Goldstein & Kopeikin, 1981; Leff & Vaughn, 1981).

However, questions remain. Can existing models developed at large research facilities in separate locations around the country be integrated into an approach that is both clinically feasible and effective? Thus, a ten session in-home educational and skills training intervention package was adapted from existing models. The package was then implemented with schizophrenic outpatients with good premorbid functioning and evaluated using several measures. Notably, the project was carried out without a large research staff or outside funding of any kind. It was hoped that the project would contribute knowledge that would be directly relevant to the typical practitioner (including those who do not have a Ph. D. and extensive training) who works in the typical community mental health center (one without large amounts of financial and staff support for programs) with severely debilitated mental patients.

Methodology

The study utilized a single-system design, specifically a multiple baseline across four families. The subjects for the study were four persons with a DSM-III diagnosis (by an M.D. psychiatrist) of schizophrenia, and their respective caregiver. Also, in order to be considered for participation, patients had to have "good" premorbid functioning as defined by a score of 22 or above for females or an 18 or above for males on the UCLA Social Attainment Scale (Goldstein, 1978). Other required criteria for inclusion were that patients be between the ages of 17 and 65, have no current problem with alcohol abuse, no dual diagnosis of mental retardation, and, have a family member who would participate in the treatment as discussed.

A total of six clients and their respective caregivers initially agreed to participate and signed the necessary forms. Two family caregivers changed their minds, however, when contacted by a member of the research team to arrange pretesting. All of the remaining four clients and their caregivers participated in pretesting, the intervention sessions, posttesting, and follow-up. Thus there were no dropouts after the onset of data collection. Ages of the patients ranged from 21 to 38 with education ranging from 9th grade to three years of college. Three patients were black. All were last discharged from a hospital over a year previously. Three lived with their caregiver, the other lived alone in an apartment. Family income ranged from \$8000 to 35,000. Three of the caregivers were mothers, one was a sister. Medication remained unchanged for each patient throughout baseline, intervention and follow-up.

Description of the Intervention Procedures

As stated earlier, the family-based intervention model was a synthesis and adaptation of previously analyzed approaches (Bentley & Harrison, in press) and included education, communication and problem-solving skills training, and stress management techniques.

The goals in this short-term model were realistic and few, and were consistent with other behavioral and crisis family therapy models. The major two goals were first, to reduce family stress, and second, to increase the social adjustment of the patient and prevent relapse. It was expected that these goals would be reached by achieving the following objectives:

1. increase knowledge about and understanding of schizophrenia,
2. promote effective communication,
3. increase problem-solving and coping skills

It is important to point out that the goals were not to help the family develop insight, or to make any personality or structural changes in the family.

The clinician was the author, a 30 year old white female who holds a Master of Science in Social Work, and had five years experience in working with the acutely mentally ill in a general hospital setting. A practice case was implemented prior to the larger study (Bentley & Harrison, in press).

The implemented model had three components, corresponding to the three objectives above, and was designed to run for ten sessions:

- I Educational component (2 sessions)
- II Communication Skills component (4 sessions)
- III Coping Skills component (4 sessions)

All sessions took place in the family home over a consecutive five week period. The real life home environment was conducive to the heavy reliance on role-playing real life situations. It was felt, as in past research, that home-based sessions would aid in treatment compliance and generalization of learning. Also, the clinician utilized a fifty sheet 12" by 18" pad of newsprint with each sessions's main ideas handwritten on it as a visual aid throughout the intervention.

The educational component was designed to facilitate the patients and families engagement in the treatment process, to decrease guilt and confusion surrounding schizophrenia, to clear up misconceptions and to generally establish a frame of reference for future work. The format of these sessions included informal lectures and guided discussions around the topic areas of diagnosis, etiology, treatment and course.

The remainder of the treatment program utilized the behavioral techniques of instruction, behavioral rehearsal, feedback, modeling and homework. These techniques provided the structure through which individualized situations and problems could be explored and specific skills could be taught. Examples of specific skills taught in this model were active listening, problem-solving, expression of feelings, and stress avoidance and reduction. Actual problems and stresses discussed in the sessions ranged from making decisions about buying a television or a car to dating, looking for a job, resolving family arguments, and coping with high expectations.

In terms of previously analyzed models, the present model most closely approximated Falloon's model in terms of content. Most of the materials and information were obtained from his associate McGill (personal communication, June 1986), or from their text Family care of schizophrenia (Falloon, Boyd, & McGill, 1984). Very recently many of the materials appeared in another book (see Liberman, 1988). However, unlike either

Falloon or Anderson's respective models, the implemented model was short-term in nature and incorporated a stress management component similar to Goldstein's (1981). It did not include an in-depth behavioral assessment as did Falloon's. It did, like Berkowitz and Leff's model (Berkowitz, Eberlein-Fries, Kuipers, & Leff, 1984), devote two sessions to education but included the client in these sessions.

Data Collection Procedures

Identifying information was obtained on the eight participants at pretesting using a general demographic data sheet. The repeated measures tool used for this study was Hudson's (Hudson, Aklin, & Bartosh, 1980) twenty-five item Likert type self-report scale, the Index of Family Relations (IFR). It has excellent reliability ($\alpha = .95$) and discriminant, construct, and factorial validity (Hudson, 1982). These data were collected biweekly.

In addition, three global measures were chosen to evaluate outcome, specifically the patient's social adjustment, the patient's clinical status or symptomatology, and the caregiver's attitude toward the patient. The data on social adjustment is discussed elsewhere (Bentley, 1988, 1987).

The patient's symptomatology or clinical status was assessed independently by the two raters in the course of a structured interview with the patient at a pretest, posttest, and at the six-week follow-up. The measure utilized to record the raters' judgments of clinical status was the twenty three item Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962) chosen on the basis of its widespread use in the literature and its quick and easy administration. The interrater agreement was 88%.

Similar to the previous two instruments described, in order to increase the comparability of this study with others of similar intent, a revised and updated Kreisman and Joy's Patient Rejection Scale, originally published in 1979 (Kreisman, Simmons, & Joy), was included to measure the caregiver's attitude toward the patient. Kreisman provided the twenty-four item version of the scale and reports a coefficient alpha of .90 (Kreisman, personal communication, March 1987).

Results

The results will be discussed around three of the major hypotheses in the study. More in-depth and complete results are found elsewhere (see Bentley, 1988, 1987). As is common in single-system research (Polster & Lynch, 1985; Bloom & Fischer, 1982), data analysis relied most heavily on visual comparison of trends in data over time.

Hypothesis 1: Both patients and caregivers will report a gradual reduction of family stress during the course of intervention, and at follow-up, relative to their baseline functioning.

In general, neither patients nor caregivers reported a severe degree of family stress during their participation in the study. Only a handful of data points (13/127) fall above the clinical cutting score of 30 on the Index of Family Relations (IFR) (See Figure 1). Patient and caregiver scores tended to correspond closely to each other in terms of slope and direction, although not necessarily in magnitude. Generally, all baselines were relatively stable with no large changes in scores during this period. For one of the cases (Case 1) intervention was associated with an increase in family stress, for another (Case 3), no changes were noted. For two of the four cases (Cases 2 and 4), participation was associated with a gradual decrease in family stress, although results from one case (Case 4) in particular more obviously fit the hypothesized slope and direction of change.

Hypothesis 2: Patients will demonstrate decreased symptomatology following the intervention.

In general, all patients scored quite low during all administrations of the instrument. BPRS scores, according to information on the instrument itself, average 28 for a client upon admission to a facility and, as stated earlier, 16 at discharge. Patients in this study scored a mean of 6.625 (standard deviation .74) at pretesting. Each client demonstrated a decrease in scores (or improvement in functioning) at the posttest with scores averaging 2.125 (standard deviation .89). Decreases were maintained at follow-up, with patients averaging 1.875 (standard deviation 1.29) (See Figure 2a).

This hypothesis was confirmed in each case and the decreases exceeded the preset criterion for clinical

Figure 1

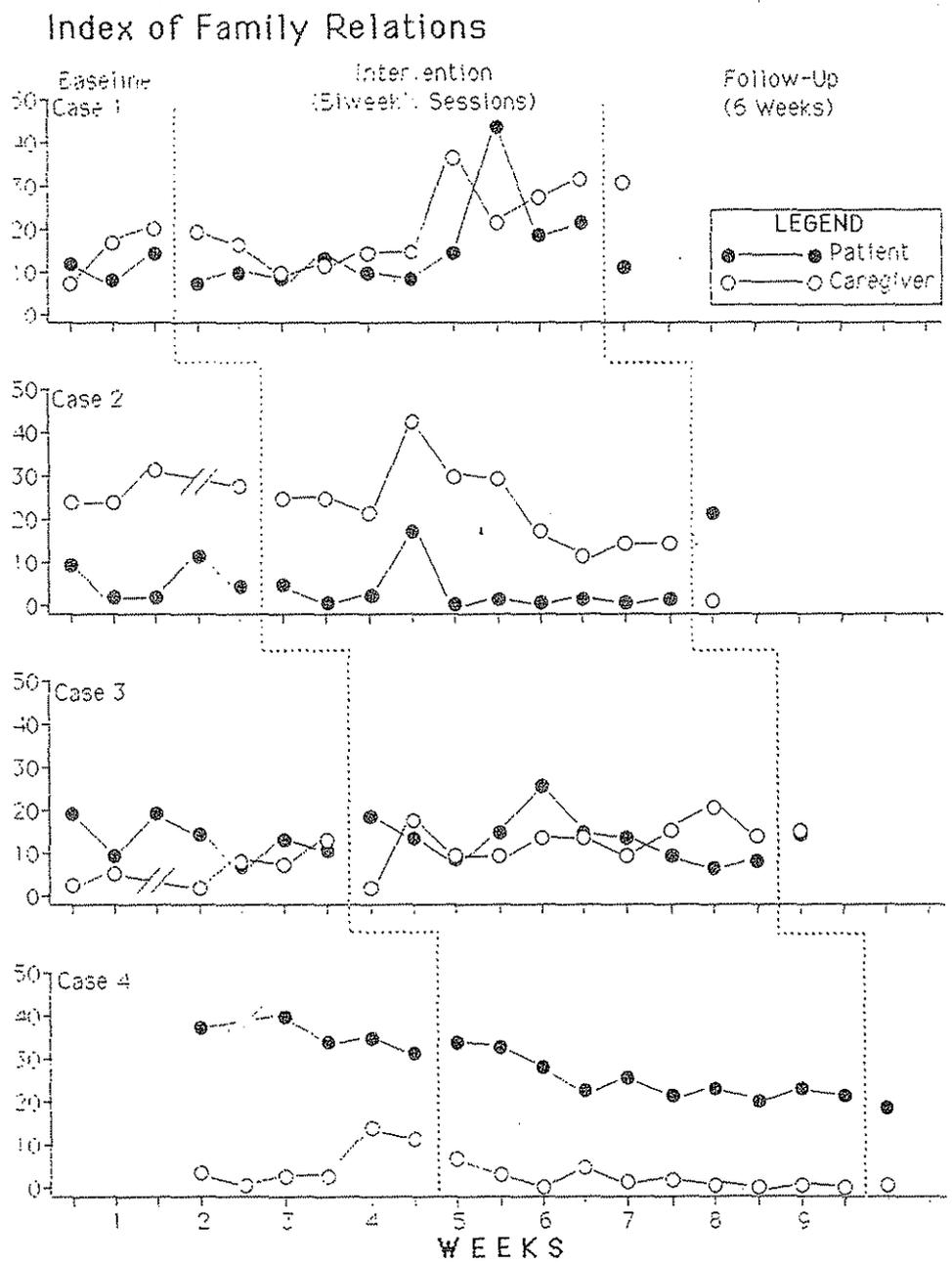
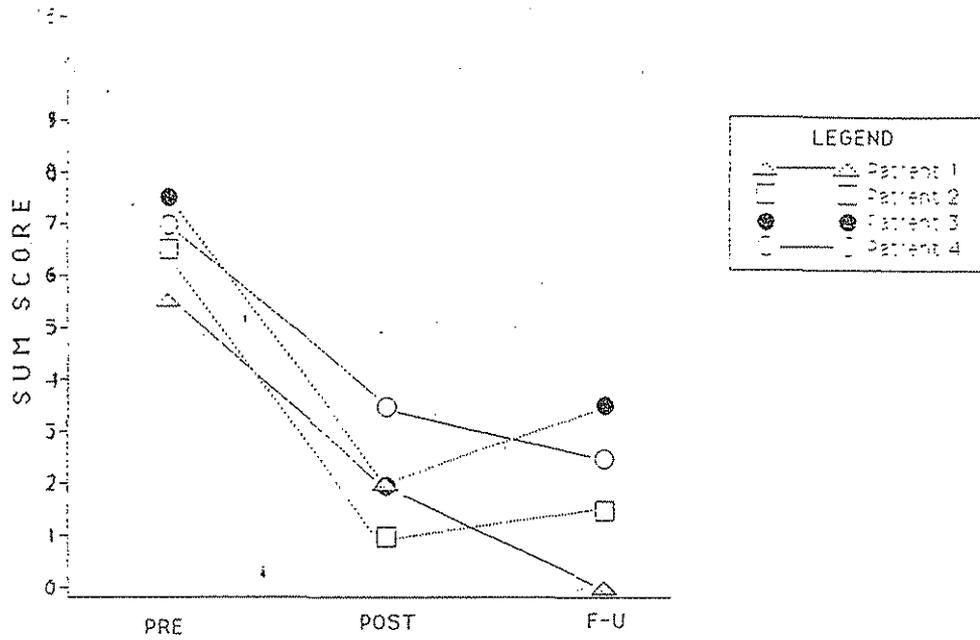
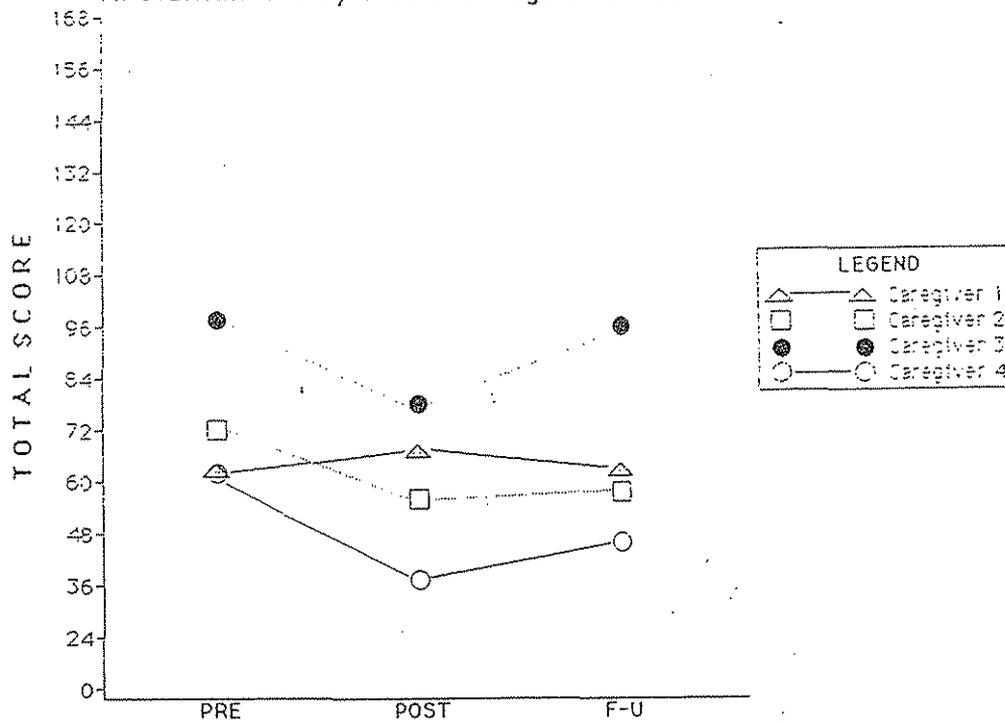


Figure 2

(a) CLINICAL STATUS--BPRS



(b) CAREGIVER ATTITUDES
Kreisman & Joy Patient Rejection Scale



significance (20% of the range).

Hypothesis 3: Caregivers will demonstrate a decrease in negative attitudes toward the patient following the intervention.

Figure 2b graphically depicts the caregiver scores on Kreisman and Joy's Patient Rejection Scale (K & J) for the three assessment periods. From pretest to posttest a dramatic decrease in scores is noted in Caregivers 2, 3, and 4 with decreases of 17, 20, and 25 points respectively (mean decrease 20.1; standard deviation 3.3). For Caregiver 1 a slight increase of 4 points is noted. At follow-up, Caregivers 2 and 4 essentially maintained their posttest scores with reported increases of only 2 and 7 points (on 142 point scale) respectively. Scores from Caregivers 1 and 3 reverted back to their baseline levels. Thus, this hypothesis is supported for two of the four caregivers.

Case by Case Summary of Results

Table 1 summarizes the results of both the repeated measures data and the patterns of pretest-posttest-follow-up scores on the basis of

TABLE 1
CASE BY CASE SUMMARY OF RESULTS

	Case #			
	1	2	3	4
FAM STRESS	+	(-)	NC	-
PT SYMPTOMS	-	-	-	-
CAREGIV ATTIT	NC	-	NC	-
HOMEWORK	72/50%	43/43%	29/43%	100/100%
SATISFACT	very/sat	very/very	neither/sat	very/very

- decrease (refers to a decrease in the problem or improvement in functioning)
- + increase (refers to an increase in the problem or deterioration in functioning)
- () slight (not clinically significant)
- NC no change

whether there were increases, decreases, or essentially no changes in scores over time. It also provides auxiliary findings on homework compliance and satisfaction with treatment. As shown, intervention is most powerfully associated with a decrease in the patient's symptomatology, as a clinically significant reduction was obtained at posttest and maintained at follow-up. For the two cases (2 and 4) who reported the hypothesized gradual reduction in family stress, there was a corresponding decrease in the negative attitudes of the respective caregivers. All changes are noted despite the potential of a floor effect. That is, in general, all patients and caregivers scored quite low on all measures prior to treatment indicating the participants were all fairly high functioning individuals.

Discussion

It was hypothesized that patients and caregivers would, following a stable baseline, report a gradually decreasing level of family stress. In two cases this hypothesis was supported; in two cases it was not. The two cases that do report a decrease in family stress largely support the wealth of family-based intervention literature that associates a variety of models with "decreases in family distress" (Anderson, Reiss, & Hogarty, 1986, p. 25), "reducing family stress" (Glick, et al., 1985, p. 884), and "lowering family tension" (Falloon, Boyd, & McGill, 1984, p. 353).

It is interesting that the two cases where family stress data presented in the hypothesized direction and slope (Cases 2 and 4) were the only two cases where the patients had lived with their caregivers for an extended period of time. That is, Patients 2 and 4 were both young (under 23), with only two hospitalizations each, and had been living with their parents their entire lives. Patient 1, on the other hand, who reported an increase in family stress, was the only patient who did not live with the caregiver. Patient 3 had only been living with her sister three months prior to participation in this study and moved out following participation. None of the outcome data in the family intervention studies addressed the impact of residence or length of cohabitation.

In trying to understand the increase in family stress reported in Case 1, it might be useful to refer to some literature suggesting that a high number of face-to-face contact hours (over 35) between patient and

caregiver affects patient outcome (Vaughn & Leff, 1976) presumably by increasing stress. Although in this study, Patients 1 and 3 did not exceed that number of hours of contact, the amount of hours and frequency of contact was increased considerably due to the intense, short-term nature of the intervention. Thus, it may have been the change in interpersonal contact that may explain the results. In his pilot study, Falloon warned of the possibility of family treatment actually increasing stress (Falloon, Liberman, Lillie, & Vaughn, 1981) but does not identify relevant factors. Indeed, the informed consent form utilized in this study mentions that possibility by pointing out to participants that discussing previously undiscussed family and personal problems may lead to increased stress. Thus, it may be that for some, an intense (i.e. biweekly over five weeks) schedule of treatment is not the treatment of choice. The factors delineating just who might not be appropriate are not clear but may relate to the living situation including length of time in cohabitation or level of independence.

Another factor that may have effected outcome in terms of family stress is homework compliance. The data on Case 4 (both patient and caregiver) most closely match the hypothesized direction and slope and both had 100% homework compliance. Falloon (et al., 1984) states "failure to complete homework tasks is an important issue in determining the effectiveness of the intervention" (p. 290). Unfortunately, he provided little data for us to evaluate that statement empirically. In his pilot study with three male patients, he estimated that approximately one third of the assignments were completed during the five weeks of communication training.

The hypothesis that all patients would demonstrate decreased symptomatology post intervention and maintain a low level at follow-up was based on the family-based intervention studies which report "encouraging", sometimes dramatic results in terms of decreasing or forestalling patient relapse and improving their clinical status. This study's results support this body of research and add further validation to the behavioral, educational, and skills training approaches. Specifically, the findings of this study support the findings of Glick (et al, 1985), who found a significant treatment effect using a short-term inpatient treatment model for newly hospitalized patients. Although the research included a wide range

of diagnostic categories and both good and poor premorbid patients, the effect was found only in DSM III diagnosed schizophrenics with good premorbid functioning. The present study involved only DSM III diagnosed schizophrenics with good premorbid functioning. Goldstein and Kopeikin (1981), also using a short-term model, reported a significant effect on patient symptoms (using the BPRS) immediately following intervention. As was the case in this study, at the six week follow-up, some of the effects had diminished but remained significant. Falloon et al. (1984) reported no differences in the sum score of the BPRS at his nine month assessment but did note major decreases in level of withdrawal, blunted affect, and unusual thought content. According to Falloon, "remissions were prominent" (p. 340). In the present study, one of the patients (Patient 1) demonstrated complete remission as indicated by a score of zero on the BPRS at follow-up.

The positive changes observed in patient symptomatology in this study are observed in spite of the fact that patients were all outpatients who had been discharged from a facility at least one year prior to participation, and were stable on medication. Other studies (Berkowitz, Kuipers, Eberlein-Fries, & Leff, 1981; Anderson, Reiss, & Hogarty, 1985; Falloon, Boyd, & McGill, 1984; Goldstein, et al., 1978) were all connected with patient admission to a facility, a point when a patient is least stable- yet best able to demonstrate improvement. Indeed, Anderson's model calls for treatment, and probably initial assessments, to occur when the patient is actively psychotic. Their obtained improvements in the patient's clinical status, however impressive and important, are to some extent confounded by the mere passage of time which for the acutely psychotic may be enough to bring about improvement. In this study, such was not the case with patients.

The hypothesis that caregivers would demonstrate and maintain a reduction in negative attitudes toward the patient following the intervention was supported in the two cases where there was a concomitant gradual reduction in family stress. Falloon seems to, at least in part, attribute the change in stress to the change in attitude when he says "A more tolerant, supportive attitude with lowered, but realistic expectations probably contributed to a lowering of family tension" (Falloon, Boyd, & McGill, 1984, p. 353). The theory that family stress levels are related to caregiver

attitude (often measured as EE) has received tremendous attention and support in the literature (Moline, Singh, Morris, & Meltzer, 1985; Hooley, 1985; Leff & Vaughn, 1980, 1981; Vaughn & Leff, 1976). The results of this study are very consistent with that body of literature. Unfortunately since most of the family-based intervention research did not formally measure both family stress and caregiver attitude, it is impossible to judge whether the relationship found here would have also been found for them. Those that did measure changes in caregiver attitude, whether using EE (Leff, et al., 1982; Falloon, Liberman, Lillie, & Vaughn, 1981; Snyder & Liberman, 1981) or extrapolating changes from other measures (Berkowitz, Eberlein-Fries, Kuipers, & Leff, 1984; Falloon, Boyd, & McGill, 1984), all report at least some improvements including increased tolerance and greater understanding of the patient, and fewer critical comments.

Concluding Remarks

It should be remembered that all participants were volunteers, and not randomly selected from a larger pool of subjects. Also, the possibility of measurement error, including rater and subject bias, must be acknowledged. The most obvious limitation of any single-system research is its unknown generalizability (Hersen & Barlow, 1976). Replication must be relied on to provide information regarding the reliability and generalizability of the findings (Johnston & Pennypacker, 1980).

Future directions for research and clinical practice suggested by this paper are (1) the need for greater understanding of the mechanisms or processes by which positive outcomes are achieved, (2) continuing refinement of assessment devices for clinicians, (3) training for, and dissemination of, effective practice technologies.

The social work profession has traditionally focused on improving the patient's functioning by helping the family to cope with the mentally ill family member and her/his, as well as their own, problems. This is why an educational, behavioral, and skills training approach designed for use with the mentally ill and their families is especially relevant to social workers. It teaches families and patients about mental disorders as well as teaching practical coping skills to manage everyday life, and hopefully bring about improved

functioning on the part of the patient. Unlike in the past, the profession now has an approach available to use with patients and families that is empirically based.

References

- Anderson, C., Reiss, D., & Hogarty, G. (1986). Schizophrenia and the family: A practitioner's guide to psychoeducation and management. NY: The Guilford Press.
- Bentley, K. (1988). Evaluation of family-based intervention with schizophrenia using single-system design. Manuscript submitted for publication.
- Bentley, K. (1987). Family-based intervention with schizophrenia: A clinical outcome study. Unpublished doctoral dissertation. The Florida State University.
- Bentley, K. & Harrison, D. (in press). Behavioral, psychoeducational, and skills training approaches to family management of schizophrenia. In B. Thyer (Ed.) Behavioral family therapy. Beverly Hills, CA: Sage Publications.
- Berkowitz, R., Eberlein-Fries, R., Kuipers, L., & Leff, J. (1984). Educating relatives about schizophrenia. Schizophrenia Bulletin, 10, 418-429.
- Berkowitz, R., Kuipers, L., Eberlein-Fries, R., & Leff, J. (1981). Lowering expressed emotion in relatives of schizophrenics. New Directions for Mental Health Services, 12, 27-48.
- Bloom, M. & Fischer, J. (1982). Evaluating practice: Guidelines for the accountable professional. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Falloon, I., Boyd, J., & McGill, C. (1984). Family care of schizophrenia: A problem-solving approach to the treatment of mental illness. New York: The Guilford Press.
- Falloon, I., Liberman, R., Lillie, F., & Vaughn, C. (1981). Family therapy of schizophrenics with high risk of relapse. Family Process, 20, 211-221.
- Glick, I., Clarkin, J., Spencer, J., Haas, G., Lewis, A., Peyser, J., DeMane, N., Good-Ellis, M., Harris, E., & Lestelle, V. (1985). A controlled evaluation

of inpatient family intervention. Archives of General Psychiatry, 42, 882-886.

- Goldstein, M. (1978). Further data concerning the relation between premorbid adjustment and paranoid symptomatology. Schizophrenia Bulletin, 4, 236-243.
- Goldstein, M. & Kopeikin, H. (1981). Short- and long-term effects of combining drug and family therapy. New Directions for Mental Health Services, 12, 5-26.
- Goldstein, M., Rodnick, E., Evans, J., May, P., & Steinberg, M. (1978). Drug and family therapy in the aftercare treatment of acute schizophrenia. Archives of General Psychiatry, 35, 1169-1177.
- Hersen, M. & Barlow, D. (1976). Single-case experimental designs: Strategies for studying behavior change. New York: Pergamon Press.
- Hooley, J. (1985). Expressed emotion: A review of the critical literature. Clinical Psychology Review, 5, 119-139.
- Hudson, W. (1982). The clinical measurement package: A field manual. Homewood, IL: The Dorsey Press.
- Hudson, W., Acklin, J., & Bartosh, J. (1980). Assessing discord in family relationships. Social Work Research and Abstracts, 16, 21-29.
- Johnston, J. & Pennypacker, H. (1980). Strategies and tactics of human behavioral research. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Kazdin, A. (1978). Methodological and interpretive problems of single-case experimental designs. Journal of Consulting and Clinical Psychology, 4, 629-642.
- Kreisman, D., Simmons, S., & Joy, V. (1979). Rejecting the patient: Preliminary validation of a self-report scale. Schizophrenia Bulletin, 5, 220-222.
- Leff, J., Kuipers, L., Berkowitz, R., Eberlein-Fries, R., & Sturgeon, D. (1982). A controlled trial of social intervention in the families of schizophrenic patients. British Journal of Psychiatry, 141, 121-134.

- Leff, J. & Vaughn, C. (1981). The role of maintenance therapy and relatives expressed emotion in relapse of schizophrenia: A two year follow-up. British Journal of Psychiatry, 139, 102-104.
- Leff, J. & Vaughn, C., (1980). The interaction of life events and relatives expressed emotion in schizophrenia and depressive neurosis. British Journal of Psychiatry, 136, 146-153.
- Liberman, P. (1988). Behavioral family management. In P. Liberman (Ed.) Psychiatric rehabilitation of chronic mental patients (pp. 199-244). Washington, D.C.: American Psuchiatic Press.
- Moline, R., Singh, A. Morris, A., & Meltzer, H. (1985). Family expressed emotion and relapse in schizophrenia in 24 urban American patients. American Journal of Psychiatry, 142, 1078-1080.
- Overall, J. & Gorham, D. (1962). The brief psychiatric rating scale. Psychological Reports, 10, 799-812.
- Polster, R. & Lynch, M. (1985). Single-subject designs. In R.M. Grinnel (Ed.), Social work research and evaluation (2cd ed.) (pp. 381-431). Itasca, IL: F.E. Peacock Publishers.
- Snyder, K. & Liberman, P. (1981). Family assessment and intervention with schizophrenics at risk for relapse. New Directions for Mental Health Services, 12, 49-60.
- Vaughn, C. & Leff, J. (1976). The influence of family and social factors on the course of psychiatric illness: A comparison of schizophrenic and depressed neurotic patients. British Journal of Psychiatry, 129, 125-137.