The Impact of Education About Schizophrenia on Relatives Varying in Expressed Emotion

by Louis J. Cozolino, Michael J. Goldstein, Keith H. Nuechterlein, Kathryn L. West, and Karen S. Snyder

Abstract

The demand for information by relatives and the success of family intervention programs with an initial didactic component has resulted in a proliferation of educational interventions in schizophrenia. The present study assesses the impact of a single educational session on relatives of recent-onset schizophrenic patients. Results suggest that relatives who participated in family education experience an increased sense of support from the treatment team and a nearly significant tendency toward a decrease in self-blame regarding the schizophrenic illness. Despite findings in previous studies suggesting information acquisition immediately after education and retention after 6 months, the present study found no information retention after a 2-month period. After family education, relatives rated as high in expressed emotion (EE) reported a significantly increased sense of understanding of the illness and expressed increased feelings of support from the treatment team, whereas low EE relatives did not change significantly in these attitudes as a function of the educational session. Low EE relatives demonstrated more actual information about the illness and were less likely to perceive the symptoms as being done intentionally to bother them.

The past decade has witnessed a number of attempts to develop family-based intervention programs for schizophrenic patients and their relatives (Falloon et al. 1981; Snyder and Liberman 1981; Leff et al. 1982; Hogarty et al. 1986). These programs primarily operate after the patient has left the hospital following an acute episode of the disorder. Evidence to date suggests that these newer family interventions, designed to supplement regular antipsychotic medications, are highly effective in reducing the risk of relapse of the schizophrenic disorder over the short term (Hogarty et al. 1986).

Many of the programs have been guided in one way or another by the literature on expressed emotion (EE). High EE refers to negative familial attitudes such as criticism and emotional over-involvement that have been shown to be predictive of relapse in schizophrenic illnesses (Leff and Vaughn 1985). These newer family-based interventions focus on modifying high EE behaviors and attitudes, reducing the amount of face-to-face contact in the high EE home, and supporting medication compliance.

Unlike previous approaches to family therapy, these newer programs begin by offering relatives formal education about schizophrenia. These initial didactic components set the stage for long-term intervention programs by presenting relatives with a coherent model of the disorder. They contain segments on signs and symptoms, prognosis, pathophysiology of the disorder, and the role of medication and stress reduction in successful treatment. The importance of supportive social interactions in reducing the risk of relapse is also emphasized.

While the didactic components may have broad appeal, until recently their impact has not been

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evaluated outside of the context of the extended family intervention programs to which they are usually attached. A recent study by Smith and Birchwood (1987) demonstrates that educational programs for relatives can have positive specific and nonspecific effects. Besides gains in knowledge, they report "a reduction in reported stress symptoms" and a decreased "fear of the patient."

Because it is likely that mental health facilities may have the resources to supply educational sessions but not the intensive family treatment programs, it is important that the likely impact of such cost-efficient, freestanding didactic programs continue to be examined.

The purpose of the present article is to provide evidence on the impact of a 3-hour, one-session family education program on the relatives of recent-onset schizophrenic patients observed over a 2-month period following exposure to the program. The module evaluated is a variant of those originally developed by Anderson et al. (1986) and Snyder and Liberman (1981).

Because the relatives rated as high in EE are assumed to experience and express more family tension when with their schizophrenic relative, we hypothesized that the didactic session might have an effect on these families in areas where it wouldn't with low EE relatives. Therefore, the study used a stratified random design to ensure that comparable numbers of high and low EE relatives were present in the experimental group, who received the didactic program, and in the control group, where participation in such a program was delayed for 2 months until posttests were administered.

Specifically, the study investigated whether a single didactic session about schizophrenia altered relatives' (1) knowledge about and sense of understanding of the disorder; (2) attitudes toward the patient and his/her symptoms; (3) perceived role in the etiology of the patients' illness; (4) sense of support from the treatment team; (5) reported behavior toward the patient; and (6) optimism about the future.

Methods

Subjects. Subjects were parents and siblings of schizophrenic patients from one of two sources. The majority (24) were relatives of patients who were participating in the first phase of the Developmental Processes in Schizophrenic Disorders project (Keith H. Nuechterlein, P.I.) at the UCLA Clinical Research Center for the Study of Schizophrenia. (See Nuechterlein et al. [1986a, 1986b] for details of subject recruitment.) The remaining subjects (5) were relatives of patients being treated at the Brentwood Veterans Administration (VA) Medical Center.

Patients. Patients in the Developmental Processes in Schizophrenic Disorders project were selected from admissions to UCLA Neuropsychiatric Institute (NPI) and other local Los Angeles hospitals. Both UCLA-NPI and Brentwood VA patients met the following criteria: (a) recent onset of psychosis lasting at least 2 weeks (first episode within 2 years of project entry); (b) Research Diagnostic Criteria diagnosis (Spitzer et al. 1978) of schizophrenic disorder or schizoaffective disorder, mainly schizophrenic subtype; (c) between 16 and 45 years of age; (d) no evidence of known organic central nervous system disorder; (e) no significant and habitual drug abuse or alcoholism in the 6 months before hospitalization or past abuse that clouds the diagnostic picture; and (f) no mental retardation.

The 29 schizophrenic subjects who participated in the study included 25 males and 4 females. The mean age of patients was 23.9 years (range: 17–30) with mean age of onset at 22.4 years (range: 17–29). Fourteen had no previous hospitalization, while the overall mean was one per subject.

Relatives. Data were collected on 36 individual relatives in 29 family units. Because data from two relatives of the same patient cannot be considered statistically independent observations, the one relative in the seven two-parent families who reported the most face-to-face contact with the patient was used in the data analysis (four mothers and three fathers).

These 29 relatives had a mean age of 46.6 years (SD = 10.0; range = 27–65 years). Their mean educational level was 13.4 years (SD = 2.4; range = 7–18 years), and they had a mean of 2.6 children (SD = 1.4; range = 0–6 children). The sample included 10 mothers, 3 fathers, and 2 siblings in the control group and 7 mothers, 5 fathers, and 2 siblings in the experimental group.

Procedures. Families were assigned to either an experimental (education) or a control group using a stratified random assignment to balance for high and low levels of EE. All measures were repeated in a basic pre-post design with a 2-month delay. Pretesting occurred within 3–5 weeks of hospital discharge, and education followed for the experimental relatives within 1–2 weeks. All subjects were admin-
istered posttesting approximately 2 months after pretesting. Control subjects received education at the next available opportunity after posttesting.

Because the UCLA project is examining the predictive value of familial attitudes and environmental characteristics under standardized conditions of medication and supportive individual therapy, family therapy was not offered as part of the program. The procedures for the Brentwood sample were identical except that relatives had the option of receiving family therapy after the 2-month delay for posttest.

To avoid bias in interacting with relatives, the first author (who collected the data on family education) was kept blind to the EE status of the relatives. EE ratings were determined using the Camberwell Family Interview (CFI) (Brown and Rutter 1966) for the UCLA-NPI group \( n = 24 \) and by the Five-Minute Speech Sample (FMSS) method (Magana et al. 1986) for the Brentwood sample \( n = 5 \).

Using two methods for the assessment of EE was not ideal but pragmatically necessary. The high false-negative rate (in detecting high EE) of the FMSS when compared to the CFI was a concern. Of the five relatives assessed using the FMSS, three were rated as high in EE. Thus, we run the risk that the remaining two relatives rated as low would have been rated as high by the CFI. However, because the rest of the sample was rated as approximately 50/50 (high/low) by the CFI, perhaps we can accept the 60/40 classification based on the FMSS as a fairly accurate estimate for our present purposes.

Relatives were assigned to experimental and control groups in quasi-random fashion, with the constraint that the groups were balanced based on EE ratings. The experimental group contained seven high and seven low EE relatives, and the control group contained eight high and seven low EE relatives.

**Education.** The education session was approximately 3 hours in length and was presented in four parts. (See table 1 for a brief outline of the education syllabus.) This family education session was designed by Karen Snyder, M.A., Keith Nuechterlein, Ph.D., Michael Gitlin, M.D., and Sandra Rappe, M.S.W., of the UCLA Aftercare Clinic and adapted for Brentwood by Katheryn West, Ph.D., Melvin Lansky, M.D., and Barnet Malin, M.D. The Aftercare Clinic has copies of a full transcript upon request; the transcript of the Brentwood education has been published in West et al. (1985).

The didactic presentations were delivered to relatives in groups of 6-10 in a semiformal roundtable context. To encourage comfort and participation, coffee and doughnuts were provided and relatives were told to feel free to ask questions throughout the presentations. Staff members were available for informal discussion during a mid-session break and after the conclusion of the presentations. Thus, the interpersonal as well as didactic focus of the session was emphasized.

Patients did not participate in the sessions to allow relatives the opportunity to ask questions that they might have been hesitant to address in front of their ill relative. Patients were educated in a less formal manner in individual sessions by members of the treatment team to allow pacing according to their ability to incorporate the material.

**Measures.** Identical sets of the measures presented below (except the Brief Psychiatric Rating Scale [BPRS]) were part of pretesting and posttesting for all relatives. The BPRS was administered biweekly to patients by the staff of Developmental Processes in Schizophrenic Disorders project or, for the Brentwood sample, at the time relatives were interviewed. Most of the measures used in the present study are scales, or factors from scales, which were adapted from previous research.

I. Relatives' Knowledge About and Sense of Understanding of the Disorder.

1. **Clinical information survey** (Falloon, Nuechterlein, and Snyder, unpublished document). This paper-and-pencil measure examines relatives' knowledge of the diagnosis, etiology, side effects, prognosis, and treatment of schizophrenia. Range of actual scores (11-37): higher score indicates more knowledge.

2. **Understandability of the illness.** Respondents were asked to rate two Likert-type scales, one at the beginning and one at the end of the interview, focusing on their overall sense of understanding of the illness. Range of scores (2-16): higher score indicates greater sense of understanding.

II. Relatives' Attitude Toward the Patient and the Patient's Symptoms.

3. **Patient Rejection Scale (PRS)** (Kreisman et al. 1979). A 23-item version of this scale was used in the present study. The PRS overlaps conceptually with the "hostility" and "critical comments" components of EE as measured by the CFI. Range of scores (23-161): higher score indicates more rejection.

4. **Character Attribution Scale**
Table 1. Outline of the education

Introduction
Introduction of staff members and a description of the presentations to follow.
The treatment setting and the roles of the various professionals.

Definitions & Diagnosis
“What is Schizophrenia?” Historical overview, demographics.
Common misconceptions concerning split personality and the idea that all schizophrenic persons are violent.

Symptoms
Positive symptoms: Hallucinations, delusions, disorders of thinking.
Negative symptoms: Lack of motivation, social withdrawal, poor hygiene, blunted affect.

Phenomenology
Information processing and selective attention deficits. Information overload and distractibility.
First person accounts to demonstrate the experience of the illness.

Biochemical Aspects
How we believe antipsychotic medications work.
Description of neurons, neurotransmission, and the dopamine hypothesis.

Medication
Historical overview, description of various medications, effects of positive and negative symptoms.
Side effects: risks vs. benefits.
The negative effects of street drugs.

Alternative Therapies
Megavitamin therapy, renal dialysis, rebirthing, etc. Current scientific evidence concerning their lack of efficacy.

Prognosis and the Recovery Process
A description of the various courses the illness may take.

Management
Caring for the patient and yourself during the long recovery process.
Do not argue with delusional thinking.
Avoid confrontations whenever possible.
Keep communication as clear and as simple as possible.
Avoid excessive stimulation and household disorganization.
Allow selective withdrawal by the patient.
Show care without being overinvolved.
Go on with your life—Don’t make the patient’s illness your whole life.
Use support groups for advice and support.
Range of scores (6-36): lower score indicates less belief in interpersonal etiology. Indicators of the influence of the illness on the patient (Cohen and Struening 1959). 

VI. Reliabes' Optimism Toward the Future.

8. Sense of support from the treatment team. Respondents were asked to rate their sense of support from the treatment team on a single-item, 7-point Likert-type scale with the anchor points of “1 = A Great Deal of Support” and “7 = Very Little Support.”

9. Family Conflict Scale (FCS) (Liberman, Falloon, and Aitchison, unpublished document). Relatives were asked to rate the frequency of 12 conflictual situations which often occur in families with a schizophrenic member. Range of scores (14-91): higher score indicates more conflict.

10. Hours per week spent with the patient. The relative was asked to give a day-by-day account of time spent in face-to-face contact with the patient during the week before pretesting and posttesting.

11. Hope for the future. Respondents were asked to rate their feelings of hope for the patient’s future on two Likert-type scales. Range of scores (2-16): lower score indicates more hope.

The Brief Psychiatric Rating Scale (BPRS) (Overall and Gorham 1962). This 21-item symptom scale was administered to the patient by a trained rater using an interview format and verbal anchor points developed by Lukoff et al. (1986b) as reported in Lukoff et al. (1986a). This measure was used as a covariate to determine the effect of symptom change in the patient on relatives’ reported attitudes and behaviors.

Analysis. Two × two × two analyses of variance (ANOVAs) were performed using Group (experimental vs. control), EE (high vs. low), and Time (pretesting vs. posttesting) as factors with time as a repeated measure. Group × Time interactions were used to evaluate the overall impact of the education. The main effects for EE were examined to determine how the two groups differed on the dependent variables across the other two factors. Due to the particular interest in education effects for high and low EE relatives, simple effects were then examined separately at high and low levels to determine specific effects of the education for each of these two groups. As is appropriate for a priori hypotheses, the examination of the effect of education within each EE group proceeded without the necessity of a significant omnibus F for the three-way interaction (Kirk 1982). There were no significant pre-education differences between experimental and control groups in age, education, or any of the dependent variables.

Analysis of covariance (ANCOVA) was also performed on the variables with pretest scores as the covariate to determine if this adjustment for pre/post correlation would help to detect the effects of the education. The results from these analyses did not differ in any meaningful way from the analyses presented here and are omitted for the sake of clarity and simplicity.

Generally, there was a low intercorrelation between the dependent variables. The exceptions to this were significant correlations between the PRS, CAS (see Results), and the FCS. An attempt to factor-analyze the primary dependent variables did not yield interpretable factors. Thus, this approach to developing reliable
summary dimensions did not prove fruitful.

Results

Knowledge and Sense of Understanding. According to scores on the Clinical Information Survey (CIS), education did not result in information retention over the 2-month period. The experimental group showed virtually no change, gaining only half a point from their baseline performance, while the control group showed a decline of nearly one point.

Post hoc analyses of specific areas of information (medication, treatment, etiology, symptoms, and side effects) yielded no significant topic-specific effects. (When simple-effect ANOVAs were completed with groups of high and low levels of EE, no significant education effect was present in either group.) A significant main effect for EE was found \((F = 9.06; df = 1.25; p < .01)\) which indicated that low EE subjects demonstrated significantly more information, specifically about the etiology and symptoms of schizophrenia, than did high EE subjects across pretest and posttest. It seems that regardless of whether they received the education, high EE relatives continued to demonstrate less information regarding schizophrenia (or had fixed ideas which do not agree with those of the education) about their relatives’ illness than their low EE counterparts.

The education did not significantly alter the relatives’ sense of understanding of the illness when control and experimental groups were compared across EE levels (no Group \(\times\) Time effect). However, the same analysis revealed a significant Group \(\times\) Time \(\times\) EE interaction \((F = 5.51; df = 1.25; p < .05)\). Changes among the high EE subjects appear to account for most of this effect. Analysis of simple effects within high EE subjects indicated a significant Group \(\times\) Time interaction \((F = 6.03; df = 1.25; p < .05)\). High EE subjects without the education showed a decrease in their sense of understanding over the 2-month period \((\text{pre mean} = 9.62; \text{post mean} = 7.37)\) while high EE subjects with education showed an increase \((\text{pre mean} = 9.00; \text{post mean} = 10.57)\). Low EE subjects remained virtually unchanged from pretest scores.

Overall, low EE relatives have significantly more information than high EE relatives. Their knowledge and sense of understanding of the illness do not change over the 2-month period. In contrast, the high EE relatives have less information, do not show an information gain from the education 2 months later, but do demonstrate a significant education effect on their sense of understanding of the illness. These results may suggest a generalized positive reaction on high EE relatives to being presented with information despite a lack of retention of specific content. There is also a suggestion that, without education, relatives become more confused by the illness as they spend more time interacting with the patient.

Attitudes Toward the Patient and the Patient’s Symptoms. The education presented a diathesis-stress model of schizophrenia which included an explanation of the hypothesized biochemical processes involved in the illness. Symptoms were presented as fluctuating with the illness state and not under the patient’s direct control. We hypothesized that if relatives possessed a conceptualization of schizophrenia as a distinct illness process, they would be better able to accept the patient’s symptoms as a part of the illness rather than the person’s “cussedness” (Berkowitz et al. 1984). This understanding was then expected to lead to a more positive attitude toward their ill relative. This attitude change, however, did not appear to occur in this study.

Family education had no significant effect on the relatives’ view of patients’ symptoms when control and experimental groups were compared. Factors examined included relatives’ perception of symptom stability over time, how bothersome the symptoms were to them, how much control their ill relative seemed to have over their symptoms, and whether they felt that the patient was intentionally trying to bother them by exhibiting the symptoms. Groups stratified on EE also showed no effects of the education on any of the four targeted variables.

High EE subjects in this sample did attribute significantly more negative intention to patient’s symptoms \((\text{mean} = 12.57)\) than did low EE subjects \((\text{mean} = 6.73)\) when averaged across both pretesting and posttesting, as indicated by a significant main effect \((F = 5.72; df = 1.24; p < .05)\). (High and low groups differed at both pretests and posttests as indicated by significant \(t\) tests.) While high EE relatives showed a decrease in these negative attributions after family education \((\text{pre mean} = 14.71; \text{post mean} = 10.00)\), they remained more negative toward the patient than low EE relatives.

One possible explanation of these results is that actual changes in patients’ symptomatology may have had a stronger influence on relatives’ perceptions than any other factor. To investigate this pos-
sibility, an ANCOVA, using prepost change scores on the sum of the items from the BPRS as the covariate, was performed on these and all other dependent variables. These analyses showed no significant effect of the covariate and no impact of the covariate on group, EE, or time effects. These results suggest that changes in the relatives’ perceptions of the symptoms of the illness were not related to changes in the symptomatic state of the patient as measured by the clinic staff.

Measures of patient rejection and characterological attributions were used to assess the effects of education on relatives’ attitudes toward the patients. Although highly correlated, they were both used because of their different foci. The PRS involves relatives’ interpersonal attitudes toward the patient while the CAS uses personality trait descriptors. For example, the PRS includes items such as “[the patient] makes me happy” and “It would be easier if [the patient] lived someplace else,” while the CAS consists of characterological descriptors such as “active,” “dirty,” and “intelligent,” which are located in the patient as opposed to the interpersonal relationship.

Neither of these measures revealed significant effects for the education for either high or low EE groups. However, these data reveal some interesting information consistent with both the construct and previous research in EE. High EE relatives demonstrated a nearly significant difference with more rejection (mean = 73.73) than low EE subjects (mean = 61.11) when averaged across both pretesting and posttesting ($F = 3.64; df = 1.25; p = .06$). High and low EE groups do not differ significantly at pretest but do reach a statistically significant difference at time of posttesting (high EE = 76.00, low EE = 61.21; $t = 2.19; df = 20.3; p < .05$). Thus, it appears that with continued contact with the patient, attitudes may become more consistent with those originally defined by the EE construct. However, there was a tendency by high EE relatives with education to become progressively less rejecting (pre mean = 74.00; post mean = 71.14), while those who did not receive education showed an increase (pre mean = 69.25; post mean = 80.25). No findings in these data suggest a strong relationship between EE and negative characterological statements as measured by the CAS.

**Perceived Role in the Etiology of the Illness.** Questions on the Interpersonal Etiology (IE) scale describe the causes of schizophrenia as bad parenting and other family relationships. For example, respondents were asked to indicate how much they agreed with statements such as: “If parents loved their children more, there would be less mental illness,” and “Mental patients come from homes where the parents took little interest in their children.”

Nonsignificant tendencies in the data suggest that the education may have an impact on some relatives’ sense of self-blame. The ANOVA indicated a nearly significant Group x Time interaction ($F = 4.29; df = 1.24; p < .05$). High EE subjects without education showed a decrease from a mean pretest score of 3.00 to a mean posttest score of 3.42 (higher scores equal less sense of support) while high EE subjects with education showed an increase from a pretest score of 2.57 to a posttest score of 1.00. It is interesting to note that the seven high EE subjects in the experimental group show the maximum possible score on this item at posttest.

**Sense of Support From the Treatment Team.** In response to the question, “Please rate your sense of support from the treatment team thus far,” a clear difference between experimental and control groups emerged. Over the 2-month period, the experimental group reported an increased feeling of support from the clinic staff when compared to the control group relative to baseline (see table 2).

While high and low EE groups both experienced an increased sense of support from the education, this effect was significant in the high but not in the low EE group. Analysis of simple effects which examined only high EE relatives indicated a significant Group x Time interaction ($F = 4.29; df = 1.24; p < .05$). High EE subjects without education showed a decrease from a mean pretest score of 3.00 to a mean posttest score of 3.42 (higher scores equal less sense of support) while high EE subjects with education showed an increase from a pretest score of 2.57 to a posttest score of 1.00. It is interesting to note that the seven high EE subjects in the experimental group show the maximum possible score on this item at posttest.

**Reported Behavior Toward the Patients.** The FCS was administered to determine if the education resulted in a decrease in the amount of arguments and high-emotionality situations in the home. This scale asks respondents to rate the amount of conflict in their home in areas known to be a problem for psychotic patients and their fami-
Table 2. Analyses of results

<table>
<thead>
<tr>
<th>Individual scale or item</th>
<th>Pretest Mean</th>
<th>(SD)</th>
<th>Posttest Mean</th>
<th>(SD)</th>
<th>Group × Time Interaction F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Information Survey</td>
<td>C 20.86</td>
<td>(6.86)</td>
<td>E 19.93</td>
<td>(6.54)</td>
<td></td>
</tr>
<tr>
<td>Understandability of the illness</td>
<td>C 10.00</td>
<td>(4.40)</td>
<td>E 9.13</td>
<td>(4.05)</td>
<td></td>
</tr>
<tr>
<td>Patient Rejection Scale</td>
<td>C 65.46</td>
<td>(20.92)</td>
<td>E 71.66</td>
<td>(21.42)</td>
<td>.68</td>
</tr>
<tr>
<td>Character Attribution Scale</td>
<td>C 57.80</td>
<td>(13.83)</td>
<td>E 53.93</td>
<td>(11.75)</td>
<td>.66</td>
</tr>
<tr>
<td>Symptom stability</td>
<td>C 3.73</td>
<td>(2.68)</td>
<td>E 5.20</td>
<td>(2.95)</td>
<td>.12</td>
</tr>
<tr>
<td>Target Complaint Scale</td>
<td>C 3.73</td>
<td>(2.68)</td>
<td>E 5.20</td>
<td>(2.95)</td>
<td>.12</td>
</tr>
<tr>
<td>(symptoms focused)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bothered by symptoms</td>
<td>C 21.86</td>
<td>(8.08)</td>
<td>E 19.04</td>
<td>(8.36)</td>
<td></td>
</tr>
<tr>
<td>Control over symptoms</td>
<td>C 22.66</td>
<td>(9.24)</td>
<td>E 20.60</td>
<td>(9.30)</td>
<td>1.54</td>
</tr>
<tr>
<td>Symptoms done on purpose</td>
<td>C 11.46</td>
<td>(8.60)</td>
<td>E 10.46</td>
<td>(9.01)</td>
<td>.12</td>
</tr>
<tr>
<td>(OMI) Interpersonal etiology</td>
<td>C 14.73</td>
<td>(4.49)</td>
<td>E 15.26</td>
<td>(5.41)</td>
<td>.38</td>
</tr>
<tr>
<td>Sense of support</td>
<td>C 2.92</td>
<td>(1.94)</td>
<td>E 3.14</td>
<td>(1.56)</td>
<td>5.30</td>
</tr>
<tr>
<td>Family Conflict Scale</td>
<td>C 28.26</td>
<td>(8.17)</td>
<td>E 29.80</td>
<td>(9.78)</td>
<td>.25</td>
</tr>
<tr>
<td>Hours per week with patient</td>
<td>C 23.26</td>
<td>(16.30)</td>
<td>E 18.86</td>
<td>(15.08)</td>
<td>1.14</td>
</tr>
<tr>
<td>Hope for the future</td>
<td>C 6.13</td>
<td>(3.88)</td>
<td>E 4.33</td>
<td>(2.58)</td>
<td>.19</td>
</tr>
</tbody>
</table>

C = control (n = 14)
E = experimental (n = 15)
OMI = Opinions About Mental Illness
1 p < .10
2 p < .05

families. Analysis revealed no significant impact of the education.

Hours per week spent with the patient was also a focus of the education. It was hoped that if withdrawal was reconceptualized as a positive aspect of the patient's coping that it would be more freely allowed and that time spent in face-to-face contact would decrease. Again, there were no effects of the education when comparing either experimental and control groups as a whole or when they were stratified for EE.

Optimism for the Future. This education program did not appear to have an impact on relatives' feelings of optimism toward the future after 2 months. The Berkowitz et al. (1984) study did report an increase in optimism immediately after education. Smith and Birchwood
Does a brief education program work if the participants don’t remember the information? The answer to this question is a qualified yes because it served to: (a) increase relatives’ feelings of support from the treatment team and (b) show a tendency toward reducing relatives’ sense of personal responsibility (guilt) for causing the illness.

The literature on the relationship between mental health professionals and families of schizophrenic patients emphasizes that the belief in an interpersonal etiology on the part of both relatives and professionals is widespread. Inviting relatives to participate in such a didactic program allows them access to the staff and offers them the message that they are not to blame. This message (that relatives are not to blame), combined with the opportunity for informal discussion with the staff and other relatives, may be among the most powerful active ingredients in a brief education program. Relatives also reported anecdotally that the education helped them to understand the importance of the medication and of their input into treatment.

Many possible explanations for this lack of “learning” need to be addressed in future research. Was the sample size too small to allow adequate statistical power? This is indeed a problem with the present study and an important consideration in designing future research. However, the fact that there appeared to be absolutely no change in the amount of knowledge between pretests and posttests makes other explanations for the lack of “learning” appear more likely. Was the material too complex? Tarrier and Barrowclough (1986) found that only the “upper 24 percent of the population” could understand the written materials used by Falloon et al. (1981) when employing Flesch’s (1948) method of readability. The material presented orally in this education overlapped substantially with that used in previous educational programs. Thus, although the relatives appeared to listen attentively to the presentation of material, Tarrier and Barrowclough’s results remind us that we cannot assume that what we are presenting is necessarily understood.

The timeframe in which the information is delivered might be related to relatives’ ability to understand it. Is a series of 1-hour sessions superior to one long workshop, especially in the absence of subsequent family therapy? An educational “series” allows relatives to develop questions between sessions and perhaps grow more confident about asking them. The use of audiovisual aids and understandable written materials to be taken home and studied might also aid in the learning process. These differences may account, in part, for the positive results reported by Smith and Birchwood (1987) in the area of information retention.
The continued need for reinforcement of the materials presented during education seems to be a common experience among clinicians presenting such programs (Cozolino and Goldstein 1986). The resistance to change of “lay theories” concerning the illness supports Tarrier and Barrowclough's (1986) notion that gaining information is a process of the interaction of new and old theories rather than simple acquisition. Besides inferences from preexisting theories, the emotionally charged nature of the materials and coping with the illness during the acute phase may elevate anxiety beyond optimal levels for learning. The Smith and Birchwood (1987) finding of increased information occurred where only 6 of 23 families had a schizophrenic relative in the acute phase of the illness. All 29 of the families in the present study had a relative who was acutely ill either at the time of the education or shortly before. This may account for differences in the relatives’ ability to benefit from education.

The answers to these questions about an optimal family education format are beyond the scope of the present study. Because a consistent methodology for the presentation and assessment of family education and therapy has not been used across previous studies, direct comparisons are difficult. We feel that it is important to emphasize that this is an evaluation of a brief “one-shot” education after a 2-month period which makes it, in many ways, incomparable to previous education programs that served as introductions to family therapy. It is also a generic education and therefore difficult to compare to programs where the content and evaluation have been tailored to the specific needs of individual families. Future research comparing variations in content and format is needed to elucidate the best ways to use educational resources.

What Are the Differences and Similarities Between High and Low EE Relatives? High EE relatives in this sample can be characterized by having less accurate information, especially in the areas of etiology and symptoms, than their low EE counterparts. As expected from the very nature of the EE construct, high EE relatives are more rejecting of the patient and tend to see the patient’s symptomatic behavior as being done intentionally to bother them. This constellation of less actual knowledge of the illness, more rejection, and the attribution of negative intent on the part of the patient is consistent with previous findings (Berkowitz et al. 1984).

High EE relatives appear to have a difficult time accepting that their relative is suffering with an actual illness, as reflected both in their attitudes and in their failure (or perhaps resistance) to acquire information about it. Leff and Vaughn (1985) describe low EE relatives as more accepting of the illness and as tending to seek more rational explanations for its symptoms. Further research in this area may yield important information about the different coping styles of high and low EE relatives which may be clinically useful.

Do High and Low EE Relatives Experience the Education in Different Ways? In some instances, it was possible to show an effect of the education on high EE relatives even when an effect was not found among low EE relatives. High EE relatives showed a significant increase in their sense of support from the treatment team. Although both groups show a positive change, all high EE relatives after education gave the highest possible ratings to the “support” item. High EE relatives also showed a significant increase in their overall sense of understanding of their relatives’ illness.

Because one of the implicit goals of our family education was to teach low EE attitudes to high EE relatives, it is not surprising that there may be more impact on the high EE group. If these are the relatives of patients at highest risk for relapse, then evaluation of the effectiveness of the intervention should be focused on these families. This cluster of significant and nearly significant results may suggest that high EE relatives have a positive reaction to the education which may be clinically significant.

The negative shift over time in attitudes of high EE relatives reported both by Berkowitz et al. (1984) and by Doane et al. (1986) was reflected in the present study from the high EE group without education. This group showed a decrease in their sense of understanding and sense of support and increase in feelings of self-blame and rejecting attitudes toward the patient. With education, there appeared to be an amelioration of these tendencies. Although Berkowitz et al. (1984) found that high EE relatives became less pessimistic and knew more about the diagnosis immediately after the education when compared to high EE control subjects, these differences were not present in the current research which entailed a 2-month followup. Berkowitz et al. (1984) also found that low EE relatives exhibited an increase in seeing the patient as being his/her normal self between episodes as opposed to always being ill. The present
study found this change to be occurring at both levels of EE, with and without education, over the 2-month period.

Conclusions

Although this study has yielded few statistically significant results relative to the number of analyses performed, there are a number of points which allow the present results to be presented with "guarded" optimism. Despite the number of dependent measures, each was based on an a priori hypothesis. Furthermore, both significant findings and nonsignificant tendencies are in the direction of these hypotheses. Except for the lack of impact on information, the positive significant effects occur in those measures which seem intuitively to be most directly related to the education. Finally, when groups are divided for high and low EE, the pattern of results is consistent with the EE construct. In light of these factors, presenting these results as being of possible clinical importance seems justified.

It is important to caution that due to our small sample size, we are able to detect only what Cohen (1977) would refer to as "large" effects. An examination of table 2 reveals that, for many of the variables (Information, Understandability, the amount of Control a patient is seen as having over their symptoms, etc.), there is essentially no difference between pre and post scores. An increased sample size would likely have little impact on these variables. For those variables which showed tendencies toward significance (Interpersonal Etiology, Patient Rejection Scale, Family Conflict, etc.), an increased sample size may have provided the statistical power to detect significant education effects. Thus, the lack of statistical significance in these areas should be interpreted with caution.

In addition to the specific positive findings from this and previous studies, the fact that a didactic program of this type provides a structured set of data to present to relatives may serve to combat their fears about the illness and calm the anxieties of professionals in responding to questions. Increasingly positive relationships between relatives and staff members may serve as the foundation for increased medication compliance. Written transcripts of the education which relatives can take home appears to be necessary if they are to have ready access to information after the program.

Our interaction with many relatives suggests that the benefits of family education are varied and depend in large part on the needs, expectations, and previously held theories of the participants (Cozolino and Goldstein 1986; Tarrier and Barrowclough 1986). It seems that these understandings speak to a more idiographic educational presentation and outcome evaluation. The work of Barrowclough et al. (1987) in examining the functional value of information may prove to be a positive step in more meaningful evaluation techniques. Tailoring the education to fit relatives' previous understanding may also prove fruitful (Tarrier and Barrowclough 1986).

We continue to collect data to add to these analyses as well as to explore new methods of evaluating therapeutic and psychoeducational interventions. Results from the present study suggest that a brief education program is not the panacea some have thought it to be. Brief education is no substitute for extensive family intervention. At the same time, results indicate that brief education may yield a number of clinically significant benefits in the treatment of families of schizophrenic patients.

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