

Outcomes of a Randomized Study of a Peer-Taught Family-to-Family Education Program for Mental Illness

Lisa B. Dixon, M.D., M.P.H.
Alicia Lucksted, Ph.D.
Deborah R. Medoff, Ph.D.
Joyce Burland, Ph.D.
Bette Stewart, B.S.

Anthony F. Lehman, M.D., M.S.P.H.
Li Juan Fang, M.S.
Vera Sturm, M.S.
Clayton Brown, Ph.D.
Aaron Murray-Swank, Ph.D.

Objective: The Family-to-Family Education Program (FTF) is a 12-week course offered by the National Alliance on Mental Illness (NAMI) for family members of adults with mental illness. This study evaluated the course's effectiveness. **Methods:** A total of 318 consenting participants in five Maryland counties were randomly assigned to take FTF immediately or to wait at least three months for the next available class with free use of any other NAMI supports or community or professional supports. Participants were interviewed at study enrollment and three months later (at course termination) regarding problem- and emotion-focused coping, subjective illness burden, and distress. A linear mixed-effects multilevel regression model tested for significant changes over time between intervention conditions. **Results:** FTF participants had significantly greater improvements in problem-focused coping as measured by empowerment and illness knowledge. Exploratory analyses revealed that FTF participants had significantly enhanced emotion-focused coping as measured by increased acceptance of their family member's illness, as well as reduced distress and improved problem solving. Subjective illness burden did not differ between groups. **Conclusions:** This study provides evidence that FTF is effective for enhancing coping and empowerment of families of persons with mental illness, although not for reducing subjective burden. Other benefits for problem solving and reducing distress are suggested but require replication. (*Psychiatric Services* 62:591–597, 2011)

Family members play important roles in the lives of adults with serious mental illnesses (1) and often seek information and support regarding treatments, relevant resources, coping, communication, and

problem-solving skills (2–6). Although virtually all reviews recommend including families in the care of persons with mental illness (7), reported rates of provider contact with family members rarely exceed 50% (8–10). Fami-

lies often report dissatisfaction regarding their interactions with the mental health system (4,11–16).

The self-help movement has offered a partial remedy to unmet family needs by offering programs delivered by and for family members of individuals with mental illness. The National Alliance on Mental Illness (NAMI) sponsors the most widely disseminated such program, the NAMI Family-to-Family Education Program (FTF). FTF is a 12-week course with a highly structured standardized curriculum, developed and conducted by trained family members. In weekly two- to three-hour sessions, family member attendees receive information about mental illnesses, medication, and rehabilitation. They also learn self-care, mutual assistance, and communication skills, as well as problem-solving strategies, advocacy skills, and ways to develop emotional insight into their responses to mental illness (17).

Whereas research examining the effectiveness of family education administered by clinicians has been extensive, research on family self-help programs has been limited (7). Pickett-Schenk and colleagues (18–20) compared families receiving the Journey of Hope, an eight-week family-led education course, with a wait-list control group. Families involved in the course reported better fulfillment of information needs, lower levels of depression, improved family relationships, and improved satisfaction in their caregiver role. However, Journey of Hope was

Dr. Dixon, Dr. Lucksted, Dr. Medoff, Ms. Stewart, Dr. Lehman, Ms. Fang, and Ms. Sturm are affiliated with the Department of Psychiatry, University of Maryland School of Medicine, 737 West Baltimore St., 5th Floor, Baltimore, MD 21201 (e-mail: ldixon@psych.umaryland.edu). Dr. Dixon is also with the U.S. Department of Veterans Affairs (VA) Capitol Health Care Network, Mental Illness Research, Education and Clinical Center, Baltimore, with which Dr. Brown is affiliated. Dr. Burland is with the National Alliance on Mental Illness, Arlington, Virginia. Dr. Murray-Swank is with the Washington, D.C., VA Medical Center.

restricted to Louisiana and is not currently available. Two previous studies suggested that FTF reduces participants' subjective burden and increases their perceived empowerment. The first was an uncontrolled trial; in the second, participants served as their own controls during a waiting list period (21,22). In this study we tested the effectiveness of FTF with a randomized controlled design. We hypothesized that FTF outcomes would include increased empowerment, greater knowledge, and reduced subjective burden, as well as improved emotion-focused coping and family functioning with reduced distress.

Methods

Settings and design

Individuals were randomly assigned to take the FTF class immediately or to wait at least three months until the next FTF class (control condition). Those in the control group could use any other supports offered by NAMI, by mental health professionals, or in the community. The study was conducted in the areas of Maryland served by five NAMI affiliates: Baltimore Metropolitan region and Howard, Frederick, Montgomery, and Prince George's Counties. FTF classes were delivered by trained volunteer family members, according to usual NAMI locations and schedules. The study did not alter the FTF classes or their delivery; every class could include both research participants and nonparticipants. Anyone contacting the NAMI-Maryland office or a participating affiliate and expressing interest in FTF received basic information and was referred to NAMI-Maryland's FTF state coordinator. She spoke with each person to determine whether he or she was suited to participate in the FTF program. She described this study to suitable candidates, conducted a preliminary screen for eligibility, and determined the candidate's willingness to participate in the study. Research assistants contacted eligible willing family members and obtained informed consent via telephone in a protocol approved by the University of Maryland Institutional Review Board.

Consenting participants were assessed at baseline (before FTF started), randomly assigned to immediate

FTF or to a wait-list control group, and interviewed again three months later (after those assigned to FTF completed the course) by a research assistant unaware of assigned study condition. Assessments were conducted with a structured telephone interview that lasted approximately 60 minutes. A stratified block randomization procedure was used with stratification by site and randomly varying block sizes. After the baseline interview, an independent member of the research staff informed the research assistant of the treatment assignment, which was kept in a sealed envelope; the research assistant then informed participants of their assigned condition. Participants were told at the beginning of each follow-up interview not to reveal their study condition; if that occurred, the interview would be stopped and continued with another interviewer. Participants were recruited between March 15, 2006, and September 23, 2009, and were enrolled in 54 different classes. They were paid \$15 for each interview. At the conclusion of the second interview, the interviewer inquired about the number of FTF classes attended and the participant's use of other supports during the three-month interval.

Participants

Individuals were eligible for the study if they were 21–80 years of age, desired enrollment in the next FTF class regarding a member of the family or significant other, and spoke English. Of 1,532 individuals screened, 1,168 were determined to be eligible for the study. The most common reason for ineligibility was that a person's schedule did not permit participation in FTF at the next round of class offerings. Of those who were eligible, 339 (29%) were willing to consider study participation. The most common reason for declining study participation was unwillingness to take the chance of needing to wait before taking FTF. A total of 37 additional people who were family members of potential participants were also eligible and expressed interest in the study. From this group, 322 individuals consented to the study, but four were administratively withdrawn, leaving a total of 318 consenting individuals who completed

the baseline interview and were randomly assigned—160 to FTF and 158 to the wait-list control group. [A figure illustrating the eligibility and assignment process is available as an online supplement to this article at ps.psychiatryonline.org.]

Assessments and variables

We obtained background information using the Family Experiences Interview Schedule (FEIS) (23). This instrument elicits information regarding demographic characteristics and level of involvement with the participant's ill relative, the ill relative's demographic characteristics and mental health history, the extent of contact between the participant and the ill relative, and the extent to which family members provide assistance in daily living and supervision to their ill relative.

Indicators of problem-focused coping were evaluated with empowerment and knowledge scales. The Family Empowerment Scale has three subscales: family (12 items), community (ten items), and service system empowerment (12 items) (24). We assessed knowledge about mental illness using a 20-item true-false test of factual information (available from authors) covering material drawn from the FTF curriculum that tapped general knowledge about mental illnesses.

Emotion-focused coping was measured with four COPE subscales: emotional social support, positive reinterpretation and growth, acceptance, and denial (25). The COPE has demonstrated good reliability and validity and has been adapted for family members of individuals with serious mental illness (26).

Subjective illness burden was evaluated with the FEIS worry and displeasure scales (23). The eight-item worry subscale asks respondents to rate their level of concern on different aspects of their ill relative's life. The eight-item displeasure subscale measures the participant's emotional distress concerning the ill relative's situation (23).

We assessed distress with the Brief Symptom Inventory (BSI-18) and the Center for Epidemiological Studies Depression Scale (CES-D). The BSI-18 is a measure of psychological distress designed for use primarily in nonclinical, community populations. It

measures level of somatization, anxiety, and depression and generates a total score of the respondent's overall level of psychological distress. The raw scores for the BSI-18 symptom dimensions were converted to area T scores on the basis of norm tables for community males and community females. The BSI-18 has well-established reliability and validity (27). The modified version of the CES-D is a reliable and valid 14-item scale designed to measure depressive symptoms in the general population (28,29).

We assessed family functioning with the Family Assessment Device (FAD) and the Family Problem-Solving Communication (FPSC) scale. The FAD evaluates family functioning and family relations (30) and is widely used in studies of family response to medical and physical illness, with well-established reliability and validity (31). We used its general functioning (12 items) and problem-solving (five items) subscales. The ten-item FPSC scale measures positive and negative aspects of communication (32).

We adapted a series of structured questions regarding the use of diverse community and clinical family support services, support groups, and attendance at FTF classes from our previous studies (21,22).

Fidelity

To ensure that participants received the standardized FTF program, experienced FTF teachers acted as observers to rate one session of each course. They were oriented to the purpose and procedures of the fidelity observations and were paid \$40 for each completed observation. We randomly sampled one of the first eight class meetings from each 12-session course. Classes 1 and 3 were excluded because of the sensitive nature of their content. Fidelity ratings were based on a structured rating form created for a prior FTF study (available from authors) in consultation with Joyce Burland, Ph.D. (FTF creator), to capture 18 essential elements of FTF. Overall scores were calculated by deriving the percentage of indicators present. If a class meeting scored less than 75% fidelity, we randomly sampled and assessed another class meeting in that same course from among classes 9, 10, or 11 (class 12 was

excluded because of its celebratory theme). Ten observers provided 49 observations. The mean±SD fidelity rating was 90%±8%. Only one class fell below 75% fidelity, and its second assessment met fidelity standards.

Data analysis plan

We first assessed the impact of loss to follow-up by using t tests and chi square tests to assess whether participants who completed the three-month assessment differed from those who did not on demographic characteristics (age, gender, race, education, income, and relationship to consumer) and baseline scores of outcome variables (coping, subjective burden, psychological distress, and family functioning).

We used multilevel regression models (SAS, version 9.2, PROC MIXED procedure) to test our main hypotheses of whether participation in FTF led to increased constructive coping activities, reduced subjective illness burden, reduced distress, and improved family functioning. The models tested for significant changes over time (baseline and three months) between conditions (FTF or control) by using the score at the three-month assessment as the dependent variable and condition as the primary independent variable, with baseline assessment score and class as covariates.

Class was included in the model as a random variable because participants taking the same class may be more similar in their response to the intervention than people from different classes. Because people in the same class (FTF condition) were likely to be more similar to each other than to the participants in the control group, we estimated this effect separately for each condition.

Another way that participants could be similar is if they were related. Direct relatives who were in the study were always randomly assigned together to the same condition. Because the family pairings were nested within classes, the variance component due to class incorporated the variance due to family. Because of the small class cluster size (4.32±2.94), we did not attempt to fit a separate variance component due to family. To control for type I error for our primary hypotheses (problem-focused coping reflected

by empowerment and knowledge and subjective burden) we used the sequential Bonferroni-type procedure for dependent hypothesis tests of Benjamini and Yekutieli (33) to control the false discovery rate at 5%. The false discovery rate is the expected (or on average) proportion of falsely rejected hypotheses. Our primary hypotheses were informed by our preliminary data. Exploratory hypotheses tested dimensions not previously examined. No error correction was used for the exploratory hypotheses of emotion-focused coping, distress, and family functioning.

Two additional sets of analyses were completed. First we repeated the identical analyses described above but included only the participants in the FTF condition who attended at least one class. Although our primary results are based on the intent-to-treat analysis including all randomly assigned participants who completed the three-month assessment, we also wanted to examine a sample of FTF participants who had some FTF exposure. This excluded 17 FTF participants who did not attend any classes.

Second, in order to address potential bias due to participant loss to follow-up, we refitted the models after using a multiple imputation procedure in a regression to impute missing three-month outcome values using the guidelines of Sterne and colleagues (34). Predictors for the imputation model for each outcome included the following variables: class, condition, outcome variable assessed at baseline, baseline variables predictive of loss to follow-up, and other measures correlated with the outcome measure at baseline. Thirty imputed data sets were generated and analyzed for each outcome using SAS PROC MI. Results of the analysis of each of the 30 data sets were combined with the use of SAS Proc MIAnalyze. These analyses did not substantively change our findings.

Results

Participants

Compared with individuals who refused study participation, consenting individuals were younger (51.9±10.9 versus 53.5±11.6 years; $t=-2.13$, $df=1,063$, $p=.034$) and more likely to be women (241 of 313, 77%, versus

601 of 849, or 71%; $\chi^2=4.53$, $df=1$, $p=.033$). Consenting and refusing individuals did not differ by county or race. A total of 133 (83%) and 126 (80%) individuals in the FTF and control conditions, respectively, completed three-month follow-up interviews.

Table 1 shows the descriptive characteristics of the sample of individuals who completed both assessments. Family members who were Cau-

casian ($p<.001$) and who had income of more than \$50,000 per year ($p<.001$), lower baseline worry ($p=.012$), higher baseline knowledge ($p=.002$), higher levels of acceptance ($p=.045$), and lower levels of somatization ($p=.042$) were somewhat more likely to be interviewed at follow-up. The characteristics of participants lost to follow-up did not differ by study condition.

Use of services and supports

Participants assigned to the FTF condition attended an average of 8.08 ± 4.27 FTF classes. Seventeen (13%) FTF participants attended no classes, and 77 (58%) attended ten to 12 classes. In spite of instructions, five participants (4%) in the control group attended one FTF class, and five (4%) attended more than one but fewer than six FTF classes. A total of 112 participants (89%) in the control group attended no FTF classes. Table 2 shows the other support services received by participants during the three-month study period.

Comparison of FTF and control group outcomes

FTF participants had significantly greater improvements on indicators of problem-focused coping, as measured by empowerment (within the family, service system, and community subscales) and knowledge about mental illness (Table 3). Subjective burden did not differ across groups. In exploratory analyses, FTF participants had significantly greater improvements on the COPE acceptance subscale, which emphasizes the importance of accepting one's family member's illness. Of the four coping subscales, the acceptance subscale is most closely related to the FTF model. FTF participants also showed significant reductions in the anxiety subscale of the BSI and significantly improved scores on the FAD problem-solving subscale compared with controls. The effect sizes for empowerment were in the medium range, whereas other effect sizes were small. Notably, changes observed on the FAD problem-solving and COPE acceptance subscales are consistent with reports in the literature in which these scales were used to differentiate clinical from nonclinical samples or changes in clinical samples over time (25,35-40)

When comparing FTF participants who attended at least one FTF class ($N=116$) with those in the control group, we found that the differences between groups observed in the completer analysis above persisted. In addition, this narrower sample showed significantly reduced depression as measured by the CES-D (FTF baseline 8.7 ± 7.4 , control group baseline

Table 1

Characteristics of sample assigned to peer family counseling for family members of adults with mental illness or to a wait-list control group

Dimension	Total sample (N=259)		Family-to- Family program (N=133)		Wait-list control (N=126)	
	N	%	N	%	N	%
Age (M±SD)	52.2±10.6		52.6±10.2		51.8±11.0	
Gender						
Male	60	23	33	25	27	22
Female	196	77	99	75	97	78
Race-ethnicity						
Asian	6	2	5	4	1	1
Black	55	21	29	22	26	21
Hispanic	4	2	1	1	3	2
White	186	72	92	70	94	75
Other	7	3	5	4	2	2
Education						
Some high school	6	2	3	2	3	2
High school graduate	28	11	16	12	12	10
Some college	54	21	27	20	27	21
College graduate	70	27	34	26	36	27
Postgraduate	101	39	53	40	48	38
Family income						
≤\$50,000	67	30	34	26	33	28
>\$50,000	185	73	98	74	87	73
Relationship to consumer						
Parent	154	60	75	56	79	63
Child	19	7	7	5	12	10
Sibling	32	12	20	15	12	10
Spouse or partner	27	10	18	14	9	7
Other kin	25	10	12	9	13	10
Nonkin, friend	2	0	1	1	1	1
Affiliate location						
Baltimore Metropolitan area	88	34	46	35	42	33
Montgomery County	86	33	41	31	45	36
Frederick County	39	15	22	17	17	14
Howard County	43	17	21	16	22	18
Prince George's County	3	1	3	2	0	—
Objective illness burden						
Assistance in daily living (M±SD) ^a	1.09±.96		1.04±.94		1.14±.98	
Supervision (M±SD) ^b	.42±.58		.47±.06		.37±.55	
Psychiatric hospitalization of family member in past 6 months	80 ^c	31	48	36	32 ^c	26

^a As measured by the Family Experiences Interview Schedule (FEIS), Assistance in Daily Living Module. Possible scores range from 0 to 4, with higher scores indicating that the family member provides more assistance to the consumer regarding daily living tasks.

^b As measured by the FEIS Supervision Module. Possible scores range from 0 to 4, with higher scores indicating that the family member provides more supervision of the consumer's potentially problematic behaviors.

^c Missing data for two participants

Table 2

Family members' use of supports outside of Family-to-Family (FTF) program during the three-month study period

Non-FTF support	Assigned to Family-to-Family program (N=133)			Assigned to wait-list control (N=126)		
	N	N	%	N	N	%
From mental health program in past 3 months	132	53	40	126	47	37
Counseling or therapy with private counselor	132	43	33	125	38	30
Group counseling therapy	132	4	3	125	5	4
Telephone hotline support	132	7	5	125	3	2
Other mental health service or program	132	13	10	124	11	9
Informal support in past 3 months	132	101	77	126	87	69
Friend or family	132	99	75	126	82	65
Religious or spiritual	132	52	39	125	54	43
Support group (not NAMI) ^a	132	16	12	126	5	4
Telephone hotline support	132	9	7	126	4	3
Drop-in center	132	1	1	126	0	—
Information present	132	6	5	126	9	7
Listserv or chat room	131	10	8	126	9	7
Other	131	17	13	125	15	12
Any support (from mental health program or informal)	132	106	80	126	97	77

^a NAMI, National Alliance on Mental Illness

9.1±7.4; FTF three-month follow-up 7.1±6.6, control group three-month follow-up 8.5±6.8; $\beta \pm SE = -1.43 \pm .65$; $t = -2.19$, $df = 98$, $p = .031$) and reduced overall distress as measured by the BSI Global Severity Index (FTF baseline 51.9±9.1, control group baseline 52.3±9.4; FTF three-month 49.6±8.4, control group three-month 51.9±9.1; $\beta \pm SE = -2.01 \pm .93$; $t = -2.17$, $df = 98$, $p = .032$).

Discussion

This study provides empirical support that NAMI's FTF program helps family members of individuals with mental illness in several ways. Consistent with our previous studies, FTF increased the participant's empowerment within the family, service system, and community. Knowledge about mental illness increased extending our previous finding that evaluated only self-reported knowledge.

Exploratory analyses suggest additional benefits of FTF that have not been previously evaluated. Emotion-focused coping improved with respect to acceptance of mental illness, the dimension of emotion-focused coping most relevant to FTF's curriculum. Improvements in the problem-solving subscale of the FAD suggest that FTF may influence how family members solve internal problems and navigate

emotional difficulties. Although the exploratory nature of this aim requires replication, such a finding is noteworthy given FTF's brevity and its reliance on the participation of a family member without the individual who has a mental illness.

Our study also found that FTF reduced the anxiety scores of participants. This finding is consistent with Pickett-Schenk and colleagues' (19) study of the Journey of Hope, in which that family-led course improved the well-being of family members. It is also noteworthy that the secondary analyses including only individuals who attended at least one FTF session found that FTF produced significantly reduced depression and overall distress. This is important because it models the real-life use of FTF, in that one must attend the program sessions (not just be randomly assigned to do so) to glean such benefits.

The quantitative findings of this study remarkably echo findings of our qualitative work on FTF, which suggested that the growth in empowerment and coping as well as reductions in distress together produced meaningful benefits in the lives of FTF participants (41). Lucksted and colleagues (41) used rigorous qualitative methods to understand how FTF achieved its impact and found that individuals who

completed FTF experienced marked immediate positive global benefits with the promise of longer-term growth. They also found that these benefits could be understood in terms of self-help theory, stress-coping, and trauma-recovery models. Dr. Burland's original vision for FTF as a self-help program extended beyond empowerment, knowledge, and coping and problem-solving skills; she conceived of FTF as a way to change the "consciousness" of family members.

We were surprised that FTF did not reduce subjective illness burden as in our preliminary studies. One possibility is that this study's sample was different, because the two preliminary studies (21,22) did not require randomization and had much higher consent rates. Although randomized trials enhance internal validity, this design has limitations in external validity; the study sample may not be as representative of all FTF participants as our preliminary work. We are addressing this possibility in a substudy focusing on individuals who declined random assignment, which will be reported separately.

In addition to the limitations imposed by a modest consent rate, our study was conducted in one geographic region and relied on participant self-report. Balancing out these

Table 3

Outcomes for participants completing Family-to-Family (FTF) counseling and for participants assigned to a wait-list control group

Measure	Score range	Baseline				3-month follow-up				Regression results ^a					Effect size ^b
		FTF (N=133)		Control (N=126)		FTF (N=133)		Control (N=126)		β	SE	df	t	p	
		M	SD	M	SD	M	SD	M	SD						
Family member problem-focused coping															
Family Empowerment Scale															
Family subscale	1-5 ^c	3.4	.6	3.3	.7	3.7	.6	3.5	.6	.14	.06	102	2.39	.027	.31
Service system empowerment subscale	1-5 ^c	3.2	.8	3.0	.9	3.4	.8	3.1	.9	.23	.08	102	2.99	.012	.42
Community subscale	1-5 ^c	2.6	.7	2.3	.7	2.9	.8	2.5	.7	.26	.07	102	3.93	.005	.50
Knowledge test	0-100 ^c	60.6	16.8	58.5	17.8	65.4	16.9	59.1	17.4	5.28	1.95	102	2.70	.016	.40
Family member subjective burden (Family Experiences Interview Schedule)															
Worry subscale	0-4 ^d	2.7	.8	2.5	.8	2.4	.8	2.3	.7	.04	.08	102	.47	.641	.07
Displeasure subscale	1-5 ^d	2.8	.8	2.8	.9	2.5	.8	2.6	.9	-.10	.08	102	-1.21	.277	-.15
Family member emotion-focused coping (COPE Scale)															
Positive subscale	4-16 ^c	11.6	3.0	11.6	3.3	11.9	2.6	11.7	3.1	.25	.27	102	.95	.345	.12
Denial subscale	4-16 ^d	4.9	1.4	4.9	1.6	4.7	1.3	5.1	2.0	-.24	.17	102	-1.37	.174	-.18
Emotional social support subscale	4-16 ^c	12.1	3.3	12.1	3.0	12.2	3.3	11.7	3.1	.40	.33	102	1.21	.229	.17
Acceptance subscale	4-16 ^c	13.0	2.3	12.7	2.4	13.7	2.0	12.7	2.4	.74	.26	102	2.82	.006	.38
Family member psychological distress CES-D ^e															
Brief Symptom Inventory (T score)															
Global Severity Index	33-81 ^d	51.8	9.0	52.3	9.4	49.9	8.7	51.9	9.1	-1.62	.91	100	-1.76	.081	-.22
Somatization scale	38-81 ^d	48.2	8.2	50.1	8.9	48.4	8.6	50.0	8.7	-.46	.92	100	-.51	.614	-.06
Depression scale	38-81 ^d	52.0	9.2	51.4	9.8	50.2	8.8	51.3	9.5	-1.23	.95	100	-1.29	.198	-.16
Anxiety scale	38-81 ^d	52.5	9.1	52.6	9.7	50.3	8.0	52.4	9.3	-1.95	.94	100	-2.08	.04	-.26
Family system functioning															
Family Assessment Device															
General functioning scale	12-48 ^d	24.8	6.6	25.9	6.6	24.1	6.0	24.8	6.8	-.13	.64	101	-.2	.846	-.03
Problem-solving scale	6-24 ^d	13.0	3.0	13.1	3.0	12.1	2.6	12.9	2.8	-.70	.29	101	-2.38	.019	-.30
Family Problem Solving Communication Scale															
Affirming communication	0-15 ^c	10.7	2.8	10.6	3.1	11.0	2.9	10.5	3.1	.50	.32	101	1.55	.125	.21
Incendiary communication	0-15 ^d	5.9	3.4	5.7	3.2	4.9	3.2	5.3	2.8	-.43	.32	102	-1.35	.180	-.17

^a Reference: control group

^b Group difference of least-squares means divided by square root of [Var(residual) + Var(intercept)]

^c The higher the score, the better the outcome (better knowledge, better coping).

^d The higher the score, the worse the outcome (more denial, more worry, more depression symptoms).

^e Center for Epidemiological Studies Depression Scale

limitations were multiple study strengths. Our academic team's partnership with NAMI permitted us to work with five NAMI affiliates, including a culturally diverse group of participants. We were able to approach every eligible individual taking the classes during the time frame and to conduct a rigorous randomized trial without disrupting NAMI's natural delivery of FTF. Blinded raters conducted our assessments with excellent follow-up rates.

These results indicate concrete practical benefits to participants of

structured self-help programs. There are combined benefits of a support group and a didactic curriculum. As one example of this new type of mutual assistance intervention, this study highlights the value of such community-based, free programs as a complement to services within the professional mental health system. Peers with lived experience may have a unique voice in teaching such programs.

To date, FTF is offered in 49 states plus Puerto Rico, two Canadian provinces, and three regions in Mexico and Italy. It has over 3,500 volun-

teer teachers and 250 trainers of new teachers. In each locale it is supported by a combination of grass-roots donations or municipal mental health funds. The program is free to participants. Since 1991, an estimated 250,000 family members have participated in FTF classes in the United States (personal communication, Burland J, Aug 2010). In each locale, some attendees are later trained to teach the program, and a few of them receive still more training to become trainers of future teachers, which allows the model to sustain itself.

Conclusions

FTF is the most widely available and used education and support program for family members of people with mental illnesses. However, until recently, its word-of-mouth popularity among participants was not accompanied by effectiveness research. This randomized trial of FTF provides data to support the notion that brief family-driven educational programs merit consideration as an evidence-based practice (7).

Acknowledgments and disclosures

This project was supported by grant 1R01-MH72667-01A1 from the National Institute of Mental Health. The authors extend sincere thanks to the Maryland NAMI affiliates and FTF teachers, without whose assistance this study would not have been possible.

The authors report no competing interests.

References

1. Gaite L, Vazquez-Barquero JL, Borra C, et al: Quality of life in patients with schizophrenia in five European countries: the EP-SILON study. *Acta Psychiatrica Scandinavica* 105:283–292, 2002
2. Magliano L, Marasco C, Fiorillo A, et al: The impact of professional and social network support on the burden of families of patients with schizophrenia in Italy. *Acta Psychiatrica Scandinavica* 10:291–298, 2002
3. Adamec C: *How to Live With a Mentally Ill Person*. New York, Wiley, 1996
4. Marsh D: *Families and Mental Illness: New Directions in Professional Practice*. New York, Praeger, 1992
5. Jenkins J, Schumacher J: Family burden of schizophrenia and depressive illness: specifying the effects of ethnicity, gender and social ecology. *British Journal of Psychiatry* 174:31–38, 1999
6. Drapalski AL, Marshall T, Seybolt D, et al: Unmet needs of families of adults with mental illness and preferences regarding family services. *Psychiatric Services* 59:655–662, 2008
7. Dixon L, Dickerson F, Bellack A, et al: The 2009 PORT psychosocial treatment recommendations and summary statement. *Schizophrenia Bulletin* 36:48–70, 2010
8. Dixon L, Lyles A, Scott J, et al: Services to families of adults with schizophrenia: from treatment recommendations to dissemination. *Psychiatric Services* 50:233–238, 1999
9. Dixon L, Lucksted A, Stewart B, et al: Therapists' contacts with family members of persons with serious mental illness in community treatment programs. *Psychiatric Services* 51:1449–1451, 2000
10. Young AS, Sullivan G, Burnam MA, et al: Measuring the quality of outpatient treatment for schizophrenia. *Archives of General Psychiatry* 55:611–617, 1998
11. Brand U: European perspectives: a carer's view. *Acta Psychiatrica Scandinavica* 104:96–101, 2001
12. Bernheim KF, Switalski T: Mental health staff and patient's relatives: how they view each other. *Hospital and Community Psychiatry* 39:63–68, 1988
13. Grella A, Grusky O: Families of the seriously mentally ill and their satisfaction with services. *Hospital and Community Psychiatry* 40: 831–835, 1989
14. Hatfield AB, Coursey RD, Slaughter J: Family responses to behavior manifestations of mental illness. *Innovations Research* 3:41–49, 1995
15. Ostman M, Hansson L, Andersson K: Family burden, participation in care and mental health: an 11-year comparison of the situation of relatives to compulsorily and voluntarily admitted patients. *International Journal of Social Psychiatry* 46:191–200, 2000
16. Solomon P, Marcenko M: Families of adults with severe mental illness: their satisfaction with inpatient and outpatient treatment. *Psychosocial Rehabilitation Journal* 16:121–134, 1992
17. Burland J: Family-to-family: a trauma-and-recovery model of family education. *New Directions in Mental Health Services* 77:33–41, 1998
18. Pickett-Schenk SA, Bennett C, Cook JA, et al: Changes in caregiving satisfaction and information needs among relatives of adults with mental illness: results of a randomized evaluation of a family-led education intervention. *American Journal of Orthopsychiatry* 76:545–553, 2006
19. Pickett-Schenk SA, Cook JA, Steigman P, et al: Psychological well-being and relationship outcomes in a randomized study of family-led education. *Archives of General Psychiatry* 63:1043–1050, 2006
20. Pickett-Schenk SA, Lippincott RC, Bennett C, et al: Improving knowledge about mental illness through family-led education: the Journey of Hope. *Psychiatric Services* 59:49–56, 2008
21. Dixon L, Stewart B, Burland J, et al: Pilot study of the effectiveness of the Family-to-Family Education Program. *Psychiatric Services* 52:965–967, 2001
22. Dixon L, Lucksted A, Stewart B, et al: Outcomes of the peer-taught 12-week Family-to-Family Education Program for severe mental illness. *Acta Psychiatrica Scandinavica* 109:207–215, 2004
23. Tessler R, Gamache G: Family Experiences Interview Schedule (FEIS); in the Toolkit on Evaluating Family Experiences With Severe Mental Illness. Cambridge, Mass, Human Services Research Institute, Evaluation Center, 1995. Available at www.hsri.org
24. Koren P, DeChillo N, Friesen B: Measuring empowerment in families whose children have emotional disorders: a brief questionnaire. *Rehabilitation Psychology* 37:305–321, 1992
25. Carver CS, Scheier MF, Weintraub JK: Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology* 56:267–283, 1989
26. Solomon P, Draine J: Subjective burden among family members of mentally ill adults: relation to stress, coping, and adaptation. *American Journal of Orthopsychiatry* 65: 419–427, 1995
27. Derogatis LR: *BSI-18: Administration, Scoring and Procedures Manual*. New York, NCS Pearson, 2001
28. Radloff LS: The CES-D Scale: a self-report depression scale for research in the general population. *Applied Psychological Measurement* 1:385–401, 1977
29. Radloff LS, Lock BZ: The Community Mental Health Assessment Survey and the CES-D Scale; in *Community Surveys*. Edited by Weissman M, Meyers J, Ross C. New Brunswick, NJ, Rutgers University Press, 1986
30. Epstein NB, Baldwin LM, Bishop DS: The McMaster Family Assessment Device. *Journal of Marital and Family Therapy* 9:171–180, 1983
31. Sawin KJ, Harrigan MP: *Measures of Family Functioning for Research and Practice*. New York, Springer, 1995
32. McCubbin MA, McCubbin HI, Thompson AI: Family problem-solving communication (FPSC); in *Family Assessment: Resiliency, Coping and Adaptation—Inventories for Research and Practice*. Edited by McCubbin HI, Thompson AI, McCubbin MA. Madison, University of Wisconsin, 1996
33. Benjamini Y, Yekutieli D: The control of the false discovery rate in multiple testing under dependency. *Annual Statistics* 29:1165–1188, 2001
34. Sterne JA, White IR, Carlin JB, et al: Multiple imputation for missing data in epidemiological and clinical research: potential and pitfalls. *British Medical Journal* 338:b2393, 2009
35. Tamplin A, Goodyer IM: Family functioning in adolescents at high and low risk for major depressive disorder. *European Child and Adolescent Psychiatry* 10:170–179, 2001
36. Tamplin A, Goodyer IM, Herbert J: Family functioning and parent general health in families of adolescents with major depressive disorder. *Journal of Affective Disorders* 48: 1–13, 1998
37. Keitner GI, Ryan CE, Miller IW, et al: Role of the family in recovery and major depression. *American Journal of Psychiatry* 152: 1002–1008, 1995
38. Clark MS, Smith DS: Changes in family functioning for stroke rehabilitation patients and their families. *International Journal of Rehabilitation Research* 22:171–179, 1999
39. Carver CS, Pozo C, Harris SD, et al: How coping mediates the effect of optimism on distress: a study of women with early stage breast cancer. *Journal of Personality and Social Psychology* 65:375–390, 1993
40. Burkner EJ, Evon DM, Losielle MM, et al: Coping predicts depression and disability in heart transplant patients. *Journal of Psychosomatic Research* 59:215–222, 1995
41. Lucksted A, Stewart B, Forbes C: Benefits and changes for Family to Family graduates. *American Journal of Community Psychology* 42:154–166, 2008