

# Burden in Schizophrenia Caregivers: Impact of Family Psychoeducation and Awareness of Patient Suicidality

MICHAEL G. McDONELL, M. S.  
ROBERT A. SHORT, PH.D.  
CHRISTOPHER M. BERRY, B.A.  
DENNIS G. DYCK, PH.D.

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*Family caregivers of persons with schizophrenia and other psychotic disorders experience high levels of burden. Although a number of patient and caregiver predictors of burden have been identified, little research has investigated the contributions of patient depression, suicidal ideation, and substance abuse. In addition, family psychoeducation interventions have reduced patient symptoms, as well as inpatient treatment utilization; however, it is not known whether or not these interventions reduce family burden. This study investigated predictors of family burden and tested to what degree multiple family group treatment (MFGT), relative to a standard-care condition, was associated with reduced family burden. Participants*

*were 90 outpatients with a diagnosis of schizophrenia or other psychotic disorders, and their caregivers who were enrolled in a 2 year psychoeducation intervention. The best set of predictors of burden, identified by stepwise linear regression, was young patient age, awareness of patient's suicidal ideation, and family resources. These variables accounted for 32% of the total variance in burden. Findings suggest that caregiver's awareness of patient's suicidal ideation, not patient's report of suicidal ideation; and that patient age, not duration of the illness, were significant independent predictors of burden. When compared to a standard-care condition over 2 years, MFGT did not reduce family caregiver burden. Discussions focus on the relationship between burden and its predictors, and possible reasons why MFGT did not decrease burden. Modifications are proposed that may increase the impact of MFGT.*

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Michael G. McDonell; Robert A. Short; Dennis G. Dyck; Washington Institute for Mental Illness: Research and Training and Washington State University—Spokane; Christopher M. Berry, Department of Psychology, University of Minnesota.

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Correspondence concerning this article should be addressed to Dennis G. Dyck, Ph.D., Eastern Branch, The Washington Institute for Mental Illness: Research and Training, Washington State University—Spokane, 310 North Riverpoint Boulevard, P.O. Box 1495, Spokane, Washington 99210. E-mail: dyck@wsu.edu

An estimated 50 to 80% of persons with schizophrenia and related psychotic disorders live with or have regular contact with a family caregiver (Gibbons, Horn, Powell, & Gibbons, 1984; Lehman & Steinwaches, 1998a). These caregivers report high levels of burden related to caring for their family members (Gibbons et al.; Grad, & Sainsbury, 1963). Demands of caregiving include paying for psychiatric

treatment, supervision of a mentally ill family member, dealing with societal stigma associated with mental illness, and emotional distress that may result from symptoms of a family member's illness. The level of burden experienced by caregivers of persons with schizophrenia is equivalent to that of caregivers of persons with other neurological (e.g., Alzheimer's disease, mental retardation) and physical (e.g., diabetes, cancer) disorders (Biegel, Sales, & Schulz, 1991; Pariante & Carpiniello, 1996). As a result of the high proportion of family members providing care to persons with schizophrenia and the high rates of burden reported by these caregivers, researchers have attempted to identify predictors of family burden and to design family interventions that reduce the negative consequences of caring for persons with schizophrenia.

#### *Established Correlates of Caregiver Burden*

Patient stressor and caregiver resource variables have been identified as contributors to family burden (see review by Lowyck, De Hert, Peeters, et al., 2001). Patient stressors such as negative symptoms, disruptive symptoms (e.g., psychotic and aggressive symptoms), frequent psychiatric hospitalizations, and short illness duration have been linked to increased burden in caregivers of persons with schizophrenia (Biegel, Milligan, Putnam, & Song, 1994; Dyck, Short, & Vitaliano, 1999; Gibbons et al., 1984; Martens & Addington, 2001; Provencher & Meuser, 1997; Raj, Kulhara, & Avasthi, 1991; Salleh, 1994; Solomon & Draine, 1995). It is important to note that not all researchers consistently find a link between these patient stressors and family burden (Lowyck et al., 2001). However, persons with schizophrenia who are symptomatic, have many hospitalizations, and have a short illness duration, may be the most burdensome for caregivers.

Caregiver resources such as high active and low passive coping, as well as high

social support have been repeatedly linked to low levels of burden (Bibuo-Nakou, Dikaiou, & Bairactaris, 1997; Biegel et al. 1994; Dyck et al., 1999; Magliano, Fadden, Economou, et al., 2000; Magliano, Fadden, Madianos, et al., 1998; Noh & Turner, 1987; Potasznik & Nelson, 1984; Solomon & Draine, 1995). These personal and social caregiver resources appear to be particularly important predictors of burden. Among caregivers of persons with schizophrenia, Magliano et al. (1998) found that family coping strategies accounted for 56% and 47% of the variance in objective and subjective burden, respectively. Other authors have proposed that caregiver coping and social support may mitigate the relationship between patient stressors and family burden (Noh & Turner; Solomon & Draine).

#### *Associated Illness Features as Possible Correlates of Family Burden*

Persons with schizophrenia are at a high risk for substance abuse, depression, and suicidal ideation and behavior (Blanchard, Brown, Horan, & Sherwood, 2000; Fenton, McGlashan, Victor, & Blyler, 1997; Hu, Sun, Lee, et al., 1991; Lancon, Auquier, Reine, et al., 2001; Siris, Addington, Azorin, et al., 2001; Tsuang, Fleming, & Simpson, 1999; Zisook, McAdams, Kuck et al., 1999). Despite the high occurrence of these co-morbid conditions in this population and their likely burdensome consequences, few studies have investigated the contribution of these conditions to family burden in caregivers of persons with schizophrenia. In an early investigation of the predictors of family burden in persons with schizophrenia, Grad & Sainsbury (1963) found that patient suicidal ideation was the second most frequently reported source of caregiver burden. More recently, Jones, Roth and Jones (1995) demonstrated that patient suicidal threats and gestures, while rare, were a significant predictor of increased family burden.

Substance abuse in persons with serious and persistent mental illness also appears to be related to increased cost of care for families (Clark, 1994; Clark & Drake, 1994). While cost of care is not synonymous with burden, it is an important component of burden experienced by caregivers; and this relationship suggests a possible link between substance abuse and burden. While suicidality has been investigated as a predictor of family burden, and substance abuse has been associated with family cost of care, to our knowledge, substance abuse and depression have not been previously investigated as independent predictors of burden.

### *Family Psychoeducation and Family Burden*

Family psychoeducation interventions have repeatedly demonstrated reductions in illness relapse, negative symptoms, and inpatient service utilization (Dyck, Hendryx, Short, et al., 2002; Dyck, Short, Hendryx, et al., 2000; Goldstein, Rodnick, Evans, et al., 1978; Hogarty, Anderson, Reiss, et al., 1986, 1991; Leff, Berkowitz, Shavit, et al., 1989; McFarlane, Link, Dushay, et al., 1995; McFarlane, Lukens, Link, et al., 1995). As a result, family psychoeducation and support interventions are considered a best practice in the treatment of schizophrenia (Lehman & Steinwachs, 1998b).

One particular type of family intervention, multiple family group treatment (MFGT) has demonstrated outcomes that compare favorably to single family psychoeducation (McFarlane, Link, Dushay, et al., 1995; McFarlane, Lukens, Link, et al., 1995). When compared to a standard care control group, MFGT has been shown to reduce negative symptoms and inpatient service utilization (Dyck et al., 2000, 2002). MFGT integrates psychoeducation and behavioral family therapy in a multiple family group format (McFarlane, 2002). Treatment is delivered for 2 years (bimonthly for the first year and monthly for the second year) and involves four phases:

joining with the patient and family, a day-long psychoeducational workshop, relapse prevention, and vocational and social skills enhancement (McFarlane, 2002). Overall, the intervention provides families and patients with education about illness symptoms and management, as well as social support with the goals of decreasing patient symptoms, psychiatric relapse, and increasing social and vocational skills (McFarlane, 2002).

While MFGT is designed to reduce patient symptoms and increase patient social and vocational functioning, it is not designed to directly influence family burden. However, MFGT may have a positive effect on family burden because it is designed to reduce many patient risk factors of burden (e.g., positive and negative symptoms, psychiatric hospitalizations) and is hypothesized to increase family caregiver resources (e.g., social support and active coping). MFGT may have a similar affect on other patient co-morbid conditions, such as suicidality, depression, and substance abuse, thereby resulting in lower burden in caregivers to persons with schizophrenia. However, these co-morbid conditions are not a direct focus of the intervention and are most often addressed when identified in the problem solving phase of the intervention (McFarlane, 2002).

Despite the established efficacy of MFGT as an effective treatment in the reduction of patient symptoms and psychiatric service utilization and its hypothesized effects on family level variables, no study has investigated the effects of MFGT on family burden, relative to a comparison or control group.

### *Aims of the Current Study*

The current study had three specific aims. The first was to investigate the relationship between burden, its previously established patient and caregiver correlates, and other possible correlates such as substance abuse, depressive symptoms, and suicidality in outpatients with schizophrenia. The

Table 1  
Descriptive Analyses of Patients ( $N=90$ ) and Caregivers ( $N=84$ )

Variable	Percent		Mean ( <i>SD</i> )
<b>Patient</b>			
Age			33.2 (9.4)
Gender			
Male	7	7	4
Female	2	2	6
Ethnicity			
European-American	9	0	5
Non-European-American	9		5
Positive Symptoms (BPRS)			10.5 (4.6)
Negative Symptoms (mSANS)			8.5 (3.1)
Previous Psychiatric Hospitalizations			5.1 (8.4)
Illness Duration			10.0 (8.5)
Depression (BPRS, Suicide Item)			2.2 (1.1)
<b>Caregiver</b>			
Age			51.0 (12.8)
Gender			
Male	1	7	9
Female	8	2	1
Ethnicity			
European-American	9	0	5
Non-European-American	9		5
Relationship to Patient			
Parent	7	1	4
Sibling	1	1	9
Spouse/Partner	9		5
Other	7		2

Note. *Brief Psychiatric Rating Scale (BPRS); modified Scale for the Assessment of Negative Symptoms (mSANS).*

second aim was to formulate and evaluate a parsimonious predictive model of family burden. The third aim was to investigate the efficacy of MFGT in the reduction of family burden. It was hypothesized that when statistically controlling for identified correlates of family burden, MFGT would demonstrate a reduction in burden relative to a standard-care condition.

## METHODS

### *Participants*

The sample was 90 outpatients with schizophrenia and their caregivers participating in the first six of seven cohorts of a randomized clinical trial designed to assess the efficacy of MFGT. All patient participants were clients at a local community mental health center and were required to

have 5 hours per week of contact with one specified family caregiver. Patients were aged 20 to 58 years with DSM-IV diagnoses of schizophrenia ( $n=52$ ), schizoaffective ( $n=32$ ), or other psychotic disorders ( $n=5$ ) (American Psychiatric Association, 1994). One patient dropped out of the study prior to receiving a DSM-IV diagnosis. For further patient demographic information see Table 1. Each patient was asked to identify one caregiver who was asked to participate in this investigation. It was possible to obtain data from 84 caregivers. Caregivers were typically middle-aged, European-American mothers (Table 1).

### *Overview of Treatment*

Patient/caregiver dyads were randomized into either MFGT ( $n=44$ ) or standard care

(SC;  $n=46$ ). The effectiveness of MFGT was assessed for 2 years post-randomization. Ten caregiver/patient dyads dropped out of the MFGT before the completion of the intervention (five in the first year and five in the second). The MFGT model used was a replication based on the intervention described by McFarlane, Deakins, Gingerich, et al. (1991). Treatment was administered in a large community mental health agency. McFarlane and colleagues provided supervision via analysis of videotapes of treatment sessions to assure fidelity to the MFGT model.

### Measures

The majority of patient and caregiver data for this study were obtained at study entry and prior to randomization. Because of asymmetrical distributions, a number of patient variables were recoded. Table 1 includes descriptive statistics of patient variables prior to recoding. Family burden was also measured at pre-randomization and at 1 and 2 years post-randomization.

Psychiatric diagnosis, age, frequency of psychiatric inpatient hospitalizations, and duration of psychiatric illness were assessed at study entry by clinicians using the *Structured Clinical Interview for the DSM-IV, Psychotic Disorders Version* (SCID; First, Spitzer, Gibbon, & Williams, 1995). The number of hospitalizations was recoded into dichotomous groups. Persons with no or one hospitalization were placed into one group ( $n=28$ ), and persons reporting multiple hospitalizations were assigned to a second group ( $n=61$ ). Illness duration was also recoded into two groups: 10 years or less ( $n=53$ ) and greater than 10 years ( $n=36$ ).

The *Brief Psychiatric Rating Scale* (BPRS; Overall & Gorham, 1962) and the *modified Scale for the Assessment of Negative Symptoms* (mSANS; Andreasen, 1983) were used to measure positive, negative, and depressive symptoms. Ratings of each domain were averaged over the pre-

randomization period of 1 to 3 months. Positive symptoms were assessed by summing five items (grandiosity, suspiciousness, hallucinations, unusual thought content, and conceptual disorganization) from the BPRS. Persons who scored a 10 or higher (average of 2 on each item, mild symptoms) were considered to have experienced positive symptoms ( $n=35$ ) and those who attained a score below 10 were considered not to have experienced positive symptoms ( $n=44$ ). Negative symptoms were assessed by summing the five global scores from the mSANS. Persons who attained a score of eight or above were considered to have experienced negative symptoms ( $n=38$ ) and participants who attained a score of less than eight were considered not to have experienced negative symptoms ( $n=43$ ). Participant depression was measured using the BPRS depression item. Thirty-two participants who had ratings below two (mild symptoms of depression) were assigned to the no-depression group and 46 persons who scored two or above were assigned to the depressed group. Substance abuse and dependence were assessed prior to randomization using the SCID, and participants were divided into two groups: those with ( $n=49$ ) and without ( $n=41$ ) DSM-IV diagnoses of substance abuse or dependence.

Patient-reported suicidal ideation was measured using a psychiatric chart review and the suicide item from the BPRS. In order to assess patient suicidal ideation and behavior, patient chart data were divided into two time periods (2 years pre-randomization and 2 years post-randomization). All occurrences of suicidal behavior and ideation noted in the chart were recorded. Suicide was defined as any self-inflicted injury that resulted in death. Suicidal attempts were defined as any self-inflicted injury that did not result in death and was accompanied by suicidal ideation. Suicidal ideation was defined as any statement in the chart

of the participant expressing self-harm. No distinction was made between chart suicidal and parasuicidal ideation as the likelihood of reliably and validly assessing the fine distinction between suicidal and parasuicidal ideation was low, given the chart review method. Based on these criteria, each thought or behavior was rated as either suicidal or not suicidal by the first author and a second rater. One-hundred percent agreement between raters was obtained for attempts and ideations. Participants with one or more suicide attempts were classified as having attempted suicide for that time period, and persons with one or more cases of suicidal ideation were classified as having suicidal ideation.

No participant committed suicide during the study. Twelve (13%) participants reported a total of 19 suicide attempts. The number of attempts ranged from 1 to 5 ( $Mdn=1$ ). Forty-five (49%) participants had a total of 161 notations of suicidal ideation. These 45 participants reported 1 to 15 suicidal ideations ( $Mdn=3$ ).

Suicidal ideation was also rated on a monthly basis from pre-randomization until 2 years post-randomization, using the suicide item from the BPRS. Suicide ideation scores were obtained by calculating each participant's maximum suicide item score from all BPRS administrations. In order to provide a conservative estimate of suicidality, participants who had a score of three or higher ("occasional suicidal thoughts without intent or specific plan or feel they would be better off dead," Overall & Gorham, 1962), were classified as having suicidal ideation and patients who had a score of two or below ("occasional thoughts of being tired of living. No overt suicidal thoughts," Overall & Gorham), were classified as not experiencing suicidal ideation. Thirty-four (37%) participants attained a score of three or higher on the BPRS suicide item during the study period.

Chart and BPRS measures of suicidal ideation were significantly correlated  $r=(88) .33, p < .01$ . Pre-randomization and post-randomization BPRS suicide scores were significantly correlated  $r=(88) .42, p < .01$ . Pre-randomization and post-randomization chart suicide scores were also significantly associated  $r=(88) .41, p < .01$ . As a result of the significant relationship between the BPRS and chart measures of suicidal ideation, a composite measure of overall suicidal ideation was created by combining these sources of data. Participants were classified as having suicidal ideation if they reported that they had suicidal ideation through either the chart or BPRS measure. Overall, 55 (61%) patients reported suicidal ideation to a clinician or study interviewer.

Caregiver passive and active coping strategies were assessed using the *Revised Ways of Coping Checklist* (RWCCCL; Vitaliano, Russo, & Carr, 1985). Passive coping was assessed by standardizing and summing the blame self, wishful thinking, blame others, and avoidance subscales. Active coping was assessed by standardizing and then summing the problem focused, seeks social support, and count your blessings subscales. Caregiver social support was measured by standardizing and then summing the subscales of the *Social Support Questionnaire* (SSQ; Sarason, Pierce, & Sarason, 1990). An overall resources variable was formulated by standardizing and then subtracting caregivers' passive coping scores from the sum of their active coping and social support scores. This composite variable was created for three reasons. First, resource variables were significantly intercorrelated ( $\alpha=.60$ ), suggesting that these variables represent a unitary construct. Second, an overall resources variable was consistent with previous conceptual models of family caregiver resource and distress variables (Dyck et al., 1999). Finally, the overall resources variable allowed for a reduction

in the number of variables examined in correlation and regression analyses.

Items H17 and H20 on the *Family Burden Interview Schedule* (FBIS; Table 1; Tessler, Fisher, & Gamache, 1992) were used to measure caregiver awareness of suicidal ideation and behavior in the patient. The FBIS was administered yearly across 3 years (pre-randomization, 1 and 2 years post-randomization). Item H17 states "During the past 30 days, did you try to prevent or stop (NAME)... from talking about suicide? From making threats to commit suicide? From actually attempting to commit suicide?" (Tessler et al., p. 87). Item H20 states: "During the past 30 days, what other person, if any, tried to prevent or stop [NAME] from talking about, threatening, or attempting suicide?" (Tessler et al., p. 88). If caregivers answered yes to either of these questions at any time during the study, the caregiver was classified as being aware of patient suicidality. While this is not synonymous with caregiver awareness, it is logically implied. Fifteen (17%) caregivers reported that they were aware of suicidality in participants. This caregiver measure of patient suicidality

was significantly correlated with the BPRS suicide item ( $r=.27, p=.01$ ), but was not associated with the chart measure of suicidal ideation ( $r=.15, p=.14$ ).

An overall burden score was calculated by standardizing and summing FBIS subscale scores. Burden was measured prior to randomization, then at 1 and 2 years post-randomization. An overall burden score was used for each time period because burden appeared to be a single unitary construct ( $\alpha=.75$ ). This scale was stable across the 3 time periods with an average correlation of .60. It is important to note that the Objective and Subjective Supervision subscales of the FBIS were omitted from the calculation of burden because they contain questions about suicidal ideation that were used as a measure of caregiver awareness of patient suicidality.

#### *Data Analytic Plan*

Bivariate relationships between pre-randomization caregiver burden, and hypothesized patient and family correlates were assessed. Patient age was also investigated as a possible correlate

Table 2  
Correlations Coefficients with Family Burden

Variable	<i>df</i>	<i>r</i>	<i>p</i> *
Patient			
Age	82	-.38	< .01
11 or More Years Since Illness Onset	82	-.23	.04
Positive Symptoms	73	.21	.07
Negative Symptoms	75	.16	.15
Multiple Previous Psychiatric Hospitalizations	82	.05	.63
Drug or Alcohol Abuse History	82	.18	.10
Depression	73	.08	.47
Report of Suicidal Ideation	82	.17	.12
Caregiver			
Awareness of Suicidal Ideation in the Patient	82	.49	< .01
Resources	71	-.23	.04

\* All statistical tests are 2-tailed

Table 3  
Multiple Linear Regression on Caregiver Burden

Variable	B	SE B	$\beta$	<i>p</i>
Patient Age	-0.15	.05	-.27	.01
Family Resources	-1.17	.47	-.24	.01
Family Awareness of Suicidal Ideation	5.41	1.27	.42	.01

Note. The overall model attained an *Adjusted R*<sup>2</sup>=.32 (3,69); *p* < .01

of caregiver burden because of its close relationship with illness onset in persons with schizophrenia. Variables that were significantly related to caregiver burden (*p* < .05) were entered into a backward stepwise linear regression in order to assess their ability to predict pre-randomization family burden. A repeated measures analysis of covariance (ANCOVA) was used to assess the influence of MFGT on family caregiver burden at 1 and 2 years post-randomization. Pre-randomization family burden and all of its significant predictors were entered as covariates in the repeated measures ANCOVA.

## RESULTS

### *Correlates of Family Burden*

Significant correlates of family burden (Table 2) included patient age  $r=(82)$   $-.38$ ,  $p < .01$ , illness duration  $r=(82)$   $-.23$ ,  $p=.04$ , family resources  $r=(71)$   $-.23$ ,  $p=.04$ , and family awareness of patient suicidal ideation  $r=(82)$   $.49$ ,  $p < .01$ . All other patient variables failed to meet the criteria for significance ( $p < .05$ ); however, positive symptoms and substance abuse demonstrated *p* values at or below .10 (Table 2).

### *Predicting Family Burden*

All significant correlates of family burden were entered into a stepwise multiple linear regression to predict family burden. Young patient age, low family resources, and family awareness of patient suicidal ideation were all found to be significant predictors of family burden (Table 3). Overall the model accounted for 32% of the variance in family burden.\*

### *MFGT and Family Burden*

At randomization, MFGT and SC groups did not differ across demographic (e.g., gender, age, ethnicity) and clinical (e.g., diagnosis, positive and negative symptoms) variables. Baseline burden scores of MFGT dropouts did not significantly differ from persons who completed the intervention.

To assess whether or not resources and awareness of patient suicidality might have indirectly influenced the relationship between MFGT and caregiver burden, each was separately tested using a repeated measures ANCOVA in which the pre-randomization scores were entered as covariates. No significant group or group by time effects were found.

To test whether or not MFGT had a direct influence on burden, a repeated measures ANCOVA was conducted controlling for only pre-randomization caregiver burden. No significant group,  $F(1,49)=.001$ ,  $p=.98$ , or group by time,  $F(1,49)=2.0$ ,  $p=.17$ , effects were observed.

Finally, to assess the effects of MFGT on caregiver burden, while controlling for the significant predictors of burden, we

\* A second regression analysis was conducted including positive symptoms and substance abuse in the model. Neither of these variables was significant, nor did they change the predictive ability of the overall model in a meaningful way.

conducted a two-by-two (group-by-occasion) ANCOVA, entering pre-randomization burden and all its significant predictors as covariates. The number of participants deleted from this analysis, because of missing outcome data because of either the caregiver dropping out of treatment (SC  $n=20$ , MFGT  $n=17$ ) or attrition during a measurement interval (SC  $n=6$ , MFGT  $n=1$ ), was not significantly different across groups. No significant main effect of group,  $F(1,40)=.15$ ,  $p<.70$ , or interaction of group and time,  $F(1,40)=1.8$ ,  $p=.18$ , was observed (means for SC were  $-0.06$  and  $0.08$  for year 1 and 2 respectively, and means for MFGT were  $0.21$  and  $-0.04$  respectively). Thus, MFGT did not significantly affect family caregiver burden.

## DISCUSSION

Consistent with previous literature, short-illness duration and low levels of caregiver resources were found to be significantly associated with increased caregiver burden (Bibuo-Nakou et al., 1997; Gibbons et al., 1984; Magliano et al., 1998; Martens & Addington, 2001; Noh & Turner, 1987; Solomon & Draine, 1995). Young patient age was also related to increased caregiver burden. In the regression analysis, younger patient age, not illness duration, was found to be a significant predictor of burden. While age and illness duration are typically related in persons with schizophrenia, perhaps it is the young age of patients and not their length of illness that is most burdensome for caregivers. Relative to patients with a later illness onset, young persons with schizophrenia may have a more severe form of the illness and/or lack adequate vocational and independent living skills. In addition, caregivers of young persons recently diagnosed with mental illness may be likely to experience greater feelings of grief or mourning. These and other issues related to young age may increase burden in caregivers of persons with schizophrenia.

Among the previously uninvestigated variables associated with the illness (substance abuse, depression, suicidal ideation, and caregiver awareness of patient suicidal ideation), only caregiver awareness of patient suicidal ideation predicted increased family burden. More specifically, caregiver awareness of patient suicidal ideation accounted for an additional 17% of the variance in burden while accounting for all other significant predictors. The finding that caregiver awareness of suicidality, in patients with schizophrenia, is an independent predictor of caregiver burden is an important contribution to the family burden literature.

More generally, this study demonstrates that it may be caregivers' awareness of patient difficulties (e.g., suicidal ideation, substance use, positive, and negative symptoms) rather than the actual presence of these difficulties that is associated with increased burden. The adage "what you don't know can't hurt you" appears to apply to family participants in this investigation. A number of caregivers in this sample appeared to be relatively unaware of suicidal ideation in their family members. Thus, while 60% of patients reported suicidal ideation to clinicians, only 17% of caregivers were aware of suicidal thought in patients. It is important to note that the wording of our caregiver measure of suicidal ideation may have led to an underestimation of caregiver awareness of patient suicidality. Despite this possibility, the large discrepancy between caregiver and patient report of patient suicidality suggests an area for further investigation.

The discrepancy between patient-reported and family awareness of patient suicidal ideation has particularly interesting implications for family psychoeducation interventions such as MFGT. Family members' awareness of suicidal ideation in their mentally ill family members may be increased by educating them about the high risk and specific warning signs of suicide

in persons with schizophrenia. This in turn may contribute to increased burden. If families are educated about suicidality (e.g., signs, symptoms, risk assessment) in persons with schizophrenia and provided with increased resources (e.g., social and professional supports, coping strategies including suicide risk management) they may be able to more effectively deal with the burden that could result from this increased awareness. These modifications to MFGT, and other family interventions, may save the lives of suicidal patients, and at the same time, mitigate or reduce family burden.

Contrary to our hypothesis, MFGT did not produce a significant decrease in caregiver burden across time. While this finding is inconsistent with the positive therapeutic effects for MFGT patients reported by other authors (Dyck et al., 2000, 2002; McFarlane, Link, et al., 1995; McFarlane, Lukens, et al., 1995), other investigators have reported similar difficulties in modifying caregiver burden (W. R. McFarlane, personal communication, 2002). There are several possible reasons why MFGT-related reductions in family burden may not have been observed here. First, it is noteworthy that in the present study the average length of illness was approximately 10 years. This long average illness duration may have allowed the families in our study considerable time to adjust to the stresses and strains of caregiving and to learn coping skills. Not only do families adjust to the illness, but a significant number of patients may show improved functioning over time. In this regard there is evidence that persons who are provided with supports and skills in community living, appear over time to learn to live with the illness and recover from its effects (Harding, Brooks, Ashikaga, et al., 1987). As well, it is possible that characteristics of burden make it a difficult outcome variable to measure (Lowyck et al., 2001). In many ways, the measurement

of caregiver burden is analogous to the measurement of quality of life. Many different domains make up burden and quality of life, making a reliable scoring of these constructs difficult.

Having outlined a number of possible reasons for the lack of MFGT-related burden reduction, it is incumbent on us to say something about the intervention as well. MFGT was designed with the primary goal of managing the patient with schizophrenia in the context of his or her family. The focus in MFGT is on the illness of the patient and not on family caregivers. Therefore, the family's burden, while important, is secondary to the goal of teaching families to manage schizophrenia. To reduce burden more effectively, MFGT would need to be modified to devote particular meetings or breakout sessions to discuss specifically issues around family burden and teach caregivers strategies which they can use to manage burden more effectively.

This study has particular limitations. First, missing data reduced statistical power when investigating MFGT's effect on burden over time. This may have resulted in an inability to detect statistically significant differences. Despite this possibility, the effect size of MFGT on burden appeared to be small in our study.

Another limitation of this study is the sample. Participants were predominately European-American; patients were mostly male, had low levels of symptoms, and had a long duration of illness; and caregivers were typically mothers. Patients received services in an outpatient community mental health center under a capitated mental health delivery setting. Our results may not generalize to persons that are not clinically (e.g., inpatients) or demographically (e.g., non-European Americans) similar to our sample.

## CONCLUSIONS

The present findings shed additional light on the predictors of caregiver burden

and the inability of MFGT to reduce burden. Certain patient stressors (young age and caregiver awareness of suicidal ideation) and a lack of caregiver resources (lack of social support and active coping, and frequent passive coping) were found to be associated with increased caregiver burden. While statistically controlling for other significant predictors, awareness of suicidal ideation appears to have a significant effect on caregiver burden. MFGT did not affect caregiver burden; however, modifications could be made to the intervention to increase the likelihood that MFGT would reduce family burden. Future research should investigate the relationship between family burden, family awareness of patient suicidality, and MFGT in larger and more clinically and demographically diverse samples.

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