

## **The Schizophrenia Care Management Program for Family Caregivers of Chinese Patients With Schizophrenia**

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***Objectives:*** This study tested the effectiveness of a schizophrenia care management program for family caregivers of Chinese patients with schizophrenia in Hong Kong.

***Methods:*** A multisite controlled trial was conducted with 92 patient-caregiver dyads. They were randomly assigned to either the schizophrenia care management program or to usual care. The patients' symptoms, functioning, and length of rehospitalization and their families' perceived social support, expressed emotion, and functioning were measured at recruitment and at one month and 15 months after the intervention.

***Results:*** Compared with families in the usual care group, families in the schizophrenia care management program reported significantly greater improvements in families' and patients' functioning and caregivers' perceived social support, and decreases in the number and length of patients' rehospitalization over the 15-month follow-up period.

***Conclusions:*** The findings provide evidence that the multidisciplinary schizophrenia care program can improve the psychosocial functioning of patients and their families and social support of caregivers. (*Psychiatric Services* 61(3):317-320, 2010)

It is recognized that caring for someone with schizophrenia can have adverse psychosocial effects on caregivers. Therefore, various psychosocial interventions have been implemented, and studies have provided preliminary evidence of their effectiveness in improving family caregivers' mental health and reducing patients' relapse and institutionalization rates (1). Recent controlled trials in Western and Asian countries have indicated that the effects that different models of family intervention have on patients' and their families' psychosocial health conditions are inconsistent and inconclusive, apart from showing improvements in the patients' relapse rate and medication compliance (2–4). Other limitations of family intervention studies are the paucity of controlled trials of needs-based interventions with a broad range of outcome measures, poor study power and high attrition rates, and insufficient interdisciplinary collaboration (2,4).

A few integrated multidisciplinary and multicomponent educational programs, such as a family psychoeducation group program in Hong Kong (5) and a needs-based psychosocial intervention in the United Kingdom (6), reported significant effects on families' management of patients' problem behaviors and families' general health. These programs

consist of multiple supportive strategies, such as schizophrenia care education, stress management, and problem-solving skills. However, only a few family intervention studies have been conducted in Asian populations, where great importance is attached to intimate interpersonal relationships and collective behaviors among family members (1). To address gaps in knowledge about the quality of family interventions, this trial was designed to test the effects of an interdisciplinary, needs-based schizophrenia care management program (SCMP) for family caregivers of Chinese patients with schizophrenia on patients' and families' psychosocial health and functioning.

## **Methods**

The study was a randomized controlled trial that used a repeated-measures design. It was undertaken between January 2007 and December 2008 and was approved by the Clinical Research Ethics Committee of the Chinese University of Hong Kong. A total of 500 Chinese family members of patients with schizophrenia who attended any of three regional outpatient clinics in Hong Kong were eligible to participate in the study, and 200 (40%) patient-caregiver dyads agreed to participate. Of these, 92 (46%) were randomly selected to take part. Based on previous studies of family intervention (4,5), this sample size was required to detect any significant difference between the groups at a 5% significance level with a power of 90%, and the size would allow 15% attrition (7).

Patient-caregiver dyads were eligible for the study. Caregivers were eligible for the study if they were 18 years or older, if they were the main caregiver for the relative with schizophrenia, and if they lived with the relative with schizophrenia. Patients had to be diagnosed as having schizophrenia according to *DSM-IV* criteria and be 18 years or older. Caregivers who had mental illness themselves or cared for more than one relative with mental illness were excluded. After written consent of caregivers and patients had been obtained following a full explanation of the study, the participants were randomly assigned to the usual care or the SCMP group.

Persons in the SCMP received usual care (routine psychiatric outpatient and family services) along with enrollment in SCMP. The SCMP was composed of 14 two-hour

sessions for each individual patient-caregiver dyad every other week. The program was based on the family psychoeducation and support programs developed by Chien and colleagues (1,5) and McFarlane and colleagues (3) and consisted of six stages: orientation and engagement, educational workshop about schizophrenia care, caregiving role and therapeutic communication, experience sharing and problem solving, community support resources, and termination of the program. Each patient-caregiver dyad in the SCMP group was given the Educational Needs Questionnaire (5,8), and a multidisciplinary committee, including a psychiatrist, a social worker, a case (nurse) manager from each clinic, and the researchers, selected the individualized intervention objectives from the responses to the questionnaire. The committee also designed an information and psychosocial support system for families linking case managers and outpatient services, health professionals, and referrals. Each patient-caregiver dyad was assigned to one case manager who received three days of formal training from the researchers. The case managers coordinated all levels of care for the family members with schizophrenia and, together with the clinic staff and family caregivers, prioritized problem areas and formulated a multicomponent program on schizophrenia care (for example, problem solving, value orientation, and education).

The program adopted a few strategies to address traditional Chinese cultural tenets. The first stage (orientation and engagement) focused on understanding strong interdependence, collective actions and decisions about family issues, acceptance of roles, and filial obligation of caregiving. In the second and third stage (educational workshop, caregiving role, and therapeutic communication), resolution of conflicts, respect for elders, and other traditional Chinese beliefs and values were emphasized in learning about home management and effective communication among family members. In the fourth stage (experience sharing and problem solving), family caregivers were guided to discuss their situations in meeting patients' demands. Because Chinese caregivers tended to prefer more hands-on and practical experiences rather than didactic teaching and open expression of their feelings, they were also invited to conduct behavior rehearsals of coping strategies and skills in resolving conflicts within the family.

Guided by a study of the psychoeducation group program in this population in 2007 (5), the SCMP adopted an individualized case management approach of family care. The content of the program was designed according to the preference and perceived needs of patient-caregiver dyads, and the case managers put much emphasis on addressing their cultural issues in family caregiving role, effective communication, and resolving conflicts, as well as hands-on practical experiences. The number of sessions had been reduced from 18 to 14 two-hour sessions; however, more individualized care had been provided by the case managers at home setting.

The usual care group received routine psychiatric outpatient and family services only. These services consisted of monthly medical consultation and treatment planning by the attending psychiatrist, nursing advice on community health care services, and brief family education (two group sessions) on patients' illness by psychiatric nurses and social workers. All patients and their family members were invited by the nurse in the clinic to participate in all of the services. The services used were freely chosen by the patient-caregiver dyads.

One researcher who was blind to the group assignment administered the pretest before the patient-caregiver dyads were randomly assigned to groups and administered two posttests at one and 15 months after the intervention. Family functioning, social support, and expressed emotion were rated with the Family Assessment Device (9), the six-item Social Support Questionnaire (10), and the Level of Expressed Emotion Scale (11), respectively. The patient symptoms and functioning were assessed with the Brief Psychiatric Rating Scale (12) and the Specific Level of Functioning Scale (13), respectively. The Chinese versions of these instruments were validated, indicating satisfactory reliability and validity (11,14). The patients' average number and length of rehospitalizations in the previous six months were also calculated. Multivariate analysis of variance (MANOVA) was performed for the outcome variables to determine the treatment effects (group  $\times$  time), followed by post-hoc Tukey's honestly significant difference analysis (that is, protected type I error). Data were analyzed on an intention-to-treat basis that maintained the advantages of random allocation (1,2). Participants who did not complete the program

remained in the study group and were asked to complete the outcome measures at the posttests, and these data were included in the data analysis.

## **Results**

Forty-four of the SCMP patient-caregiver dyads (96%) completed the program; only two dyads in the SCMP (4%) and one in the control group (2%) dropped out before completing the posttests. There were no significant sociodemographic or clinical differences between the two study groups and the 408 persons who did not participate in the study. [A table showing the sociodemographic and clinical characteristics of the two study groups and persons who did not participate in the study is available as an online supplement at [ps.psychiatryonline.org](http://ps.psychiatryonline.org).] There were also no significant differences on the baseline psychosocial measurement scores between the two study groups when analyzed by Student's t test.

There was a statistically significant difference between the two groups on the combined dependent variables ( $F=5.1$ ,  $df=6$  and  $90$ ,  $p=.003$ ; Wilks'  $\{\Lambda; \lambda\}=.93$ , partial  $\{\eta^2\}=.20$ ). As shown in Table 1, the results of MANOVA for the outcome measures indicated that there were statistically significant differences between the two groups regarding improvement in families' and patients' functioning, caregivers' social support, and number and length of rehospitalizations at the two posttests. The post-hoc comparisons indicated that the SCMP participants' family functioning and social support improved significantly at the two posttests but that the patients' functioning and number and length of rehospitalizations in this program improved significantly only at 15-months follow-up.

## **Discussion**

The findings provide preliminary support for the efficacy of the SCMP in a Chinese population to improve families' and patients' functioning and rates of patients' illness relapse, as suggested in previous Western studies (6,15). This program, which addressed the specific cultural and familial needs of those who care for patients with schizophrenia (for example, enhancing the mutual respect and interdependence of patients and caregivers,

and enhancing respect and appreciation of the caregiving role by every family member), can improve the psychosocial health condition of the whole family and decrease patients' risk of rehospitalizations over a 15-month follow-up period. Only a few studies have previously demonstrated significant long-term effects (that is, more than one year) of a family group program on both the patients' and families' psychosocial functioning (2,4). The findings of the study presented here clearly affirm the positive effects of a multidisciplinary schizophrenia management program designed to enhance family-oriented care. In addition, it is noteworthy that the caregivers in the SCMP reported a significant improvement in their family functioning and social support. These improvements might be a result of education, experience sharing, and skills training in the program, all of which are considered therapeutic factors in previous family studies (3,5,15). In return, improved patient functioning and fewer illness relapses would likely result in better family functioning and health.

It is significant that the patients' mental condition (BPRS scores) in the two groups remained stable over the 15-month follow-up. This stability could be the result of choice of medication or patients' medication adherence; however, medication adherence was not investigated in this study and would thus provide an important subject for further research. The late onset of illness among the patients (most aged 26–35 years) could indicate that Chinese families might hesitate and thus delay bringing their relative with mental illness in for treatment because of the perceived social stigma of mental illness in the community (4). However, the small size of the study group limits analysis of the mediating variables to identify the therapeutic mechanisms of this family program. Usual psychiatric care was chosen as the control condition; as such, the Hawthorne effect cannot be excluded.

## **Conclusions**

This program that was developed for family members of Chinese patients with schizophrenia and was delivered in three outpatient clinics with the multidisciplinary team was more effective than usual care. It is important to continue to implement this family-oriented intervention and to validate its long-term effects by comparing it with other family

programs and by using larger samples of persons of diverse sociocultural backgrounds or other psychiatric disorders.

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The authors report no competing interests.

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Table 1

Pre- and post-ratings of various measures by patients with schizophrenia in Hong Kong and their caregivers, by care assignment

Variable	Schizophrenia care management program (N=46 dyads)						Usual care (N=46 dyads)						F <sup>a</sup>
	Baseline		Follow-up after program completion				Baseline		Follow-up after program completion				
			1 month		15 months				1 month		15 months		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	
Caregiver assessment													
FAD <sup>b</sup>	14.1	5.9	18.0	6.7	20.2	5.8	14.8	5.9	13.5	6.1	12.4	8.3	6.10**
SSQ6 <sup>c</sup>	4.9	1.9	6.4	3.0	8.5	2.0	5.1	1.4	4.7	2.9	5.0	1.9	5.40**
LEE <sup>d</sup>	68.4	7.9	67.2	8.2	72.4	9.8	69.8	7.8	71.2	9.8	73.1	10.2	2.48
Patient assessment													
SLOF <sup>e</sup>	127.3	16.8	148.7	25.8	165.5	28.1	121.2	16.1	125.1	28.9	119.1	27.8	8.02**
BPRS <sup>f</sup>	10.7	3.9	10.1	3.0	10.0	4.8	10.5	4.9	10.7	4.0	11.0	5.9	3.02
Rehospitalization in the past 6 months													
Number	3.5	1.1	3.3	1.2	2.0	.9	3.3	1.7	3.4	1.6	3.7	1.8	5.42**
Duration (days)	16.3	4.0	15.4	4.1	12.1	4.0	16.2	4.0	18.0	5.0	19.0	5.0	4.02*

<sup>a</sup> df=1 and 90; multivariate analysis of variance (group {times; ×} time)<sup>b</sup> Family Assessment Device; possible scores range from 4 to 28, with higher scores indicating better functioning.<sup>c</sup> Six-item Social Support Questionnaire; possible scores range from 0 to 30, with higher scores indicating higher levels of social support.<sup>d</sup> Level of Expressed Emotion scale; possible scores range from 52 to 208, with higher scores indicating high level of expressed emotion in family.<sup>e</sup> Specific Level of Functioning scale; possible scores range from 43 to 215, with higher scores indicating better functioning.<sup>f</sup> Brief Psychiatric Rating Scale; possible scores range from 0 to 30, with higher scores indicating greater severity of symptoms.

\*p<.01  
\*\*p<.001