

Long-Term Outcome of Family Therapy in Schizophrenia

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Abstract

Introduction: Cognitive-behavioral family interventions in schizophrenia have proven to be effective in reducing relapse and readmission rates, and also appear to offer other benefits to patients and their families, at least in the short-term. Of particular interest to mental health services is ascertaining how long family interventions should last to maintain their benefits over the course of time. **Objective:** To determine whether or not the benefits of a family intervention in schizophrenia, conducted in the clinical practice framework, are sustainable over a five-year period. **Method:** A follow-up over a five-year period with a representative sample of patients and their families who, five years ago, participated in a twelve-month long, cognitive-behavioral family intervention. **Results:** 53.5% of patients had at least one relapse, and 16.9% followed a continuous course. The number of positive symptoms was higher after follow-up than at the end of the intervention, with significant worsening in delusions (Wilcoxon, $Z=-1.959$, $p=0.050$) and thought disorder (Wilcoxon, $Z=-2.767$, $p=0.006$); whereas social adjustment was maintained stable over time. Psychological distress in the key family member decreased significantly over time ($p=0.050$), and family expressed emotion remained at levels similar to those at the end of the intervention. **Conclusion:** Even if there is some loss of benefits from post-test to follow-up, the intervention could have overall net benefits. Subsequent studies should develop cost-efficient strategies for maintaining those patients who show excellent short-term clinical and social recovery.

Key Words: Schizophrenia, Family Intervention, Cognitive-Behavioral Therapy, Follow-Up

Introduction

The findings in this field generally suggest that relatives who support patients with schizophrenia, with reasonable expectations for their improvement and with aids focused on achieving gradual progress, may be a critical factor in the long-term outcome (1, 2).

Cognitive-behavioral family interventions in schizophrenia have proven to be effective in reducing relapse and

readmission rates (3-5), and also appear to offer other benefits to patients and their families (6). However, these interventions often are not employed in standard clinical practice (7, 8).

Of particular interest to mental health services is ascertaining how long family interventions should last. In experimental studies (9-12), the relapse rate was seen to increase considerably after the end of the intervention, and the follow-up period was extended to two years, although the rate continued to be significantly lower than in the control group (13). In the Salford Family Intervention Project, the first five- to eight-year follow-up study, the authors concluded that the benefit persists over time (14); other authors emphasize the need to extend the interventions for as long as twelve to eighteen months in order to achieve long-lasting results (15).

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The results of the international collaborative multicentric study, the Optimal Treatment Project (OTP), revealed that comprehensive and integrated treatment that continues over time produces improvements in clinical and social aspects, and also reduces the caregiver's psychosocial distress, with total recovery rates of 35% two years on (16).

The aim of the present study is to analyze if a family-based, cognitive-behavioral intervention carried out over a twelve-month period in a clinical practice setting is of sufficient duration to ensure that the benefits obtained persist over time.

Method

A follow-up study of a sample of patients suffering a schizophrenic disorder and their families who took part in a cognitive-behavioral family intervention was carried out in a clinical setting with assessment at three points in time: at the outset of the intervention, on completion of the intervention, and five years later.

Sample

A total of eighty-seven patients suffering from schizophrenia disorder (*Diagnostic and Statistical Manual of Mental Disorders III-R*) and their families was referred over two years to a family-intervention programme. All the participants understood what the procedure involved and gave their informed consent. At the start of the intervention, the average age of the patients was 26.8 years (standard deviation [SD]=6.3), with a mean period of illness of 5.5 years (SD=4.1). Most patients were men (n=58), single (n=77), with primary education studies (n=63), and unemployed (n=71). Forty-nine families scored as high family expressed emotion (EE), and forty-five caregivers reported suffering from high stress. Family knowledge of the disorder and the appropriate skills to manage stressful situations was generally low (Tables 1 and 2).

Table 1	Patients' Characteristics before Intervention (n=87)
Age, years; mean (SD)	26.8 (6.3)
Sex, n male (%)	58 (66.7)
Marital status, n single (%)	77 (88.5)
Education, n primary school (%)	63 (72.4)
Employment, n unemployed (%)	71 (81.6)
Age at onset, years; mean (SD)	21.3 (4.5)
Length of illness, years; mean (SD)	5.5 (4.1)
Previous admission, n other than index admission (%)	29 (33)
Severity of symptoms, mean PAS score (SD)	6.3 (3.2)
Social adjustment, mean DAS-II score (SD)	3.8 (1.0)
SD=standard deviation; n=number; PAS=Psychiatric Assessment Scale; DAS-II=Disability Assessment Schedule-II	

Table 2	Family Characteristics before Intervention (n=87)
High EE, n (%)	49 (56.3)
>35 hours/week contact, n (%)	56 (64.4)
Psychological distress, mean GHQ (SD)	8.1 (6.1)
Knowledge, mean KASI score (SD)	14.2 (3.8)
EE=expressed emotion; n=number; GHQ=General Health Questionnaire; SD=standard deviation; KASI=Knowledge About Schizophrenia Inventory	

Therapy Intervention

The family intervention was conducted on an outpatient basis by an interdisciplinary team specifically trained for this purpose and who subsequently attended regulated supervision sessions. The intervention lasted for a twelve-month period, consisting of weekly sessions at the beginning of the intervention and becoming less frequent toward the end of the programme. The main objectives were to help families achieve suitable and effective coping strategies by acquiring the skills needed to fulfill their proposed goals, and to enable them to find the best solutions for their problems. The strategies applied included: antipsychotic medication; training in development strategies aimed at increasing compliance with treatment; the prevention and minimization of side effects; information and education about schizophrenia; and training for managing stressful situations, early detection, and crisis intervention (17).

Follow-Up

All cases were assessed five years after they had completed the programme, or after the expected completion had they not withdrawn from the intervention. Two independent evaluators conducted the assessment. The evaluators had received specific training and showed an interclass reliability coefficient both with each other and with the trainer of 0.90 or higher.

Data was collected from medical records, from each patient's psychiatrist, and from interviews with family members. Family members who refused to be interviewed, no longer lived with the patient, or could not be located after three attempts on different days and at different times were considered losses.

Assessment

Patient-Related Variables

Admission was defined as hospital admission to a psychiatric ward, whether it was due to a symptomatic relapse or otherwise, and having taken place since intervention was completed. Relapses were recorded by means of an independent clinical appraisal by each patient's psychiatrist,

which was contrasted with the clinical record. Where needed, an independent evaluation was conducted by two psychiatrists taking into account the onset or significant increase in psychotic symptoms, duration, and need for substantial changes in treatment. Patients were deemed to follow a continuous course when they continued to present chronic and productive psychotic symptoms during most of the follow-up period.

The PAS (Psychiatric Assessment Scale) was used to assess the productive psychotic symptoms (using the items delusions, hallucinations, and thought disorder) and DAS-II (Disability Assessment Schedule) to measure social adjustment. The Spanish versions of both scales were used (18, 19).

Family Member-Related Variables

The degree of knowledge about the illness and the relatives' level of both psychological distress and family expressed emotion were measured using the Spanish versions of these interviews: Knowledge About Schizophrenia Inventory (KASI) (20), General Health Questionnaire-28 (GHQ-28) (21), and Camberwell Family Interview (CFI) (22) following the traditional rating criteria (23).

Statistical Analysis

All the cases who had agreed to participate, regardless of the number of intervention sessions attended, were included. A prior analysis comparing the cases who completed the intervention with those who withdrew (attending less than 65% of sessions) was carried out.

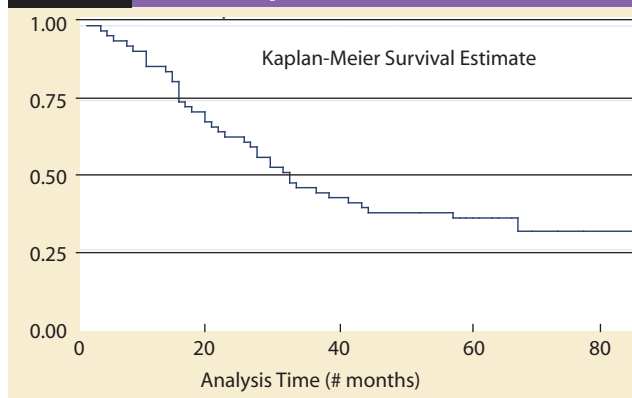
The sample, relapses, and admissions were described by digital summaries, means, and standard deviations for continuous variables and frequencies, and proportions for discrete variables. Kaplan-Meier curves were used to analyze the time lapsed until relapse and/or admission.

The changes that had taken place between the different assessments in the patient's clinical condition and social adjustment, as well as in family member variables, were analyzed using the Wilcoxon signed rank test for categorical variables, the McNemar test for two-value variables, and Student's *t* for paired data in continuous variables.

Results

Sixteen cases were lost during the follow-up period. Eight cases ceased their outpatient treatment, and three moved out of the relevant health catchment area. In two cases, it was not possible to obtain clinical data or locate the key relative at the end of the study. In three cases, the patients died before the end of treatment due to unnatural causes: two suicides and one accident. No statistically significant differences were found in terms of the socio-demographic and clinical variables measured at the onset, between losses,

Figure 1 Kaplan-Meier Estimate of Time until Relapse



and the cases evaluated in the follow-up. Only the frequency of losses is higher in the intervention withdrawal group ($\chi^2=13.720$, $p=0.000$).

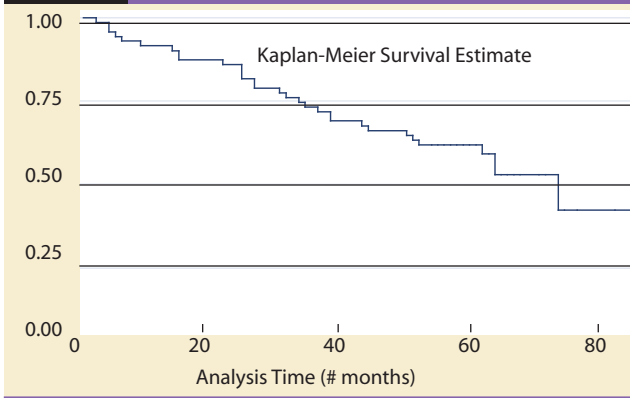
Follow-Up

Of the 71 cases followed, 21 (29.6%) had no relapse during the five-year follow-up period, 38 (53.5%) did, and 12 (16.9%) had chronic and persistent productive psychotic symptoms. The first relapses occurred gradually from the end of the intervention over a period of approximately three-and-one-half years; subsequently, just a small percentage of patients who had not already relapsed did so (Figure 1).

Contrary to our expectations, there were proportionally more relapses amongst the group who completed the intervention (72.7%) than amongst the group who withdrew from the programme (40%). However, there was a higher proportion of patients on a chronic and persistent continuous course amongst those who withdrew (31.8%) than amongst those who completed the intervention (10.2%). In both cases, the differences were statistically significant ($\chi^2=5.227$, $p=0.022$ and Fisher, $p=0.039$, respectively). The lower frequency of relapses in the drop-out group compared with those who completed the intervention could be explained by the different patient profiles. In fact, in the group of patients who withdrew from the intervention there was a higher proportion of older patients with longer illness histories (over five years), which might possibly explain the lower risk of relapse.

The admission frequency was 38%; the first admission of patients occurred throughout the follow-up period and did not cluster in the first three years as in the case of relapses (Figure 2).

Despite the differences in the relapse frequency, no differences were detected between both groups (completed intervention versus withdrew from the programme) regarding patients who were readmitted ($\chi^2=1.565$, $p<0.21$) suggesting that other factors, clinical, as well as behavioral, social or family overburdening, led to the above.

Figure 2 Kaplan-Meier Estimate of Time until Readmission

Changes between the End of the Intervention and Follow-Up

The level of psychotic symptoms was higher after follow-up than at the end of the intervention, increasing from 5.4 to 6.4. More patients deteriorated than improved, and significant changes were recorded in overall ratings as in individual items such as delusions (Wilcoxon, $Z=-1.959$, $p=0.050$) and thought disorder (Wilcoxon, $Z=-2.767$, $p=0.006$).

The percentage of patients who stopped their antipsychotic medication increased from 14% to 37% (McNemar, $p=0.000$). Social adjustment overall did not change significantly, and most of the aspects evaluated tended to improve, particularly communication (Wilcoxon, $Z=-2.191$, $p=0.028$) and task involvement (Wilcoxon, $Z=-2.117$, $p=0.034$). Understanding about the nature and management of schizophrenia deteriorated significantly except for items regarding medication, where most family members maintained or improved their knowledge.

In most instances (78.9%), family expressed emotion (EE) remained at the same level as at the end of the intervention (21.6% vs. 28.6%). In five cases (13.2%), EE increased from low to high; in three cases (7.9%), EE fell from high to low. The scales defining the EE level remained stable. Family members' psychological distress was reduced from 6.5 (SD=6.6) to 4.6 (SD=5.4) and were below the cut-off point at the end of the follow-up period.

Changes between the Start of the Intervention and Follow-Up

The frequency and severity of psychotic symptoms were similar at both times (PAS 6.3 before intervention and 6.4 in follow-up) (Table 3). The social adjustment of more than half of the patients studied improved, and the change was significant (Wilcoxon, $Z=-3.768$, $p=0.000$).

Family members' knowledge level about the nature and management of the illness was overall higher at follow-up than before intervention. The items that improved most

Table 3 Main Results at the Three Assessments

	Before Intervention	End of Intervention	Follow-Up
Relapses, %	--	27.5	53.5
Admissions, %	67.0	10.3	38.0
Symptoms, mean PAS	6.3	5.4	6.4
Social adjustment, mean DAS-II score	3.8	3.1	3.1
Knowledge, mean KASI score	14.2	19.1	16.2
Psychological distress, mean GHQ	8.1	6.5	4.6
High EE, %	56.3	21.6	28.6
Interrupted medication, %	16.0	14.0	37.0

PAS=Psychiatric Assessment Scale; DAS-II=Disability Assessment Schedule-II; KASI=Knowledge About Schizophrenia Inventory; GHQ=General Health Questionnaire; EE=expressed emotion

concerned medication (Wilcoxon, $Z=-3.023$, $p=0.003$), diagnosis (Wilcoxon, $Z=-2.828$, $p=0.005$), and symptoms (Wilcoxon, $Z=-2.165$, $p=0.030$). Family members' level of psychological distress on the GHQ was significantly lower at follow-up (4.6) than it was before the intervention (8.1) (Wilcoxon, $Z=-2.838$, $p=0.005$).

Also, the family environment was more favorable at follow-up than before intervention (51.3% of high EE families at the start, and 28.6% at follow-up). Twenty families (44.4%) improved, and this improvement was significant only in those who completed the intervention (McNemar, $p=0.000$). Family expressed emotion remained at the same level as before intervention in a similar proportion of cases ($n=23$, 51.1%), and only in two cases (4.4%) did it worsen.

Discussion

Different factors may have affected our results, and losses are one limitation of all follow-up studies. Contact was lost with a significant proportion of withdrawals in the five-year follow-up; hence, it is possible that cases with different characteristics have been excluded from the analysis. Nevertheless, the number of losses (18.4%) is comparable to those of other similar long-term follow-up studies (14, 24, 25).

The reduction in the number of cases ($n=49$) in which it was possible to interview relatives also limits our results. The fact that the analysis was carried out regardless of the number of intervention sessions attended by patients and their families implies little effectiveness, but portrays a more realistic picture from a clinical practice perspective.

As with other similar follow-up studies, the relapse rate was seen to increase considerably after the end of the inter-

vention, and the follow-up period was extended to five years. Of the three previous five-year follow-up studies of family intervention reviewed, only Lenior (25) determined the relapse rate. His results were quite similar to ours: 65% after five years, excluding cases of chronic and persistent psychotic symptoms. The lack of a control group made it impossible to compare relapses with a group under standard treatment. Given the difficulties and the ethical problems of maintaining a control group over a five-year period, the naturalistic approach used may be the only practical one as the intervention was conducted in a routine clinical setting.

Although admission rates in our sample are lower than the other two long-term studies (14, 25), 62% and 41.7%, respectively, comparisons are limited due to the fact that admissions vary depending on the resources and health policies of each country. Despite the advantages implied by using readmissions as an outcome variable, the variability to which it is subject is measured, making its comparison with other studies scarcely orientative.

The low rate of high family EE detected at the five-year assessment could be explained either as families coming to terms with the situation and experiencing less emotional distress (26), or as a direct benefit of the intervention itself, in particular improved understanding, interpersonal communication, and problem solving. In fact, the reduction observed in EE was significant only in the group who completed the intervention, with little further change in the five years of follow-up. This data, whilst not conclusive because of the low number of cases, suggests that the direct benefit of the intervention itself, and not merely the passage of time, facilitates such change.

Different studies have already pointed out the differences in the social adjustment of patients belonging to families with low and high EE, with the former being better adjusted (26, 27), and how this improved in cases participating in a family intervention (28). According to these findings, the low rates of family members with high EE after the intervention and at the end of the follow-up period suggest that social adjustment will be better and will remain stable, insofar as a more favorable family environment is sustained. The stability of this index over a five-year follow-up period reinforces the concept that improved family support may be an important factor in remission and recovery from this disorder.

Although the family's knowledge about medication was maintained and even increased, the number of those complying fell; consequently, the fact that family members were aware of the importance of medication does not necessarily mean that they were able to guarantee the patient's adherence to treatment. Once they became aware of the importance of medication, the passage of time does not seem to modify their knowledge; rather, the experience of new re-

lapses related to change and non-compliance with medication reinforced such knowledge (29, 30). However, a substantial minority of relapses is independent of antipsychotic medication (8), and this may have led to some confusion where the benefits of medication had been overvalued.

The level of psychological distress in the key family member does decrease over time, although it is only significant when the whole period is taken into account, starting from the beginning of the intervention. It is, therefore, a slow process that does not seem to respond to the clinical condition of the patient, nor to the number of relapses or admissions. A challenge has developed over time, and the illness and the resources needed to cope with it are better understood.

Some empirical studies have stated that recovery from schizophrenia is possible under two conditions: 1) at onset, with an integrated approach and rational use of medication, and 2) in those cases of greater severity or with frequent relapses, using treatments that combine biological, psychological, and social strategies applied continuously in the form of coordinated services (30).

At the moment, a reduced number of studies has conducted family interventions for more than two years, with excellent clinical and cost-benefit results (16, 31).

More long-term treatment and maintenance studies are urgently needed involving large samples and measurements repeated at regular intervals that improve on the methodological limitations of the current studies. Key issues will be to define those cases that will benefit from longer periods of intensive treatment and to develop cost-efficient strategies for maintaining those who show excellent short-term clinical and social recoveries.

Conclusions

Despite the shortcomings obliging us to interpret the results with a certain caution, we can conclude that a twelve-month family intervention conducted in a clinical setting obtained an overall gain over the course of five years. Even though there is some loss of benefits from the end of the intervention to follow-up, the program could have overall net benefits.

The impressive short-term effectiveness of this type of intervention for a chronic relapsing disorder such as schizophrenia demands that the achieved benefits are sustained and even extended over time.

The maintenance of the capacity of family members and other informal caregivers to provide long-term, supportive care without suffering excessive stress and emotional distress is a crucial component of modern psychiatric services that should not be underestimated.

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