

## The Role of Maintenance Therapy and Relatives' Expressed Emotion in Relapse of Schizophrenia: A Two-Year Follow-up

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**Summary:** A two-year follow-up study was conducted, mainly from case notes, of patients who had originally taken part in a study of the influence of relatives' expressed emotion on schizophrenic relapse. It was found that in the two years following discharge from hospital patients from high expressed emotion homes had a significantly greater relapse rate than those from low expressed emotion homes.

The prophylactic effect of maintenance drugs was no longer evident for patients from high expressed emotion homes at the two-year follow-up. By contrast, a significant protective effect of maintenance therapy emerged for patients from low expressed emotion homes.

The interpretation of these findings is discussed.

A series of studies has established a robust association between the outcome of a schizophrenic illness and the expressed emotion (EE) of the patients' relatives (Brown *et al.*, 1962, 1972; Vaughn and Leff, 1976). In each of these studies, the follow-up period was nine months after discharge from hospital. The question arises of whether relatives' EE is predictive of schizophrenic relapse over longer periods. To answer this, some of the schizophrenic patients originally studied by Vaughn and Leff in 1976 were followed up again two years after discharge.

An attempt was made to trace all patients who had not experienced a relapse by the nine-month follow-up. There were 26 of these, out of the original sample of 37, and information was sought on whether the patients had subsequently suffered a relapse of schizophrenia and whether they had taken regular maintenance therapy, both of these defined as in the original study. The majority of patients (22) had continued to attend an out-patient clinic or else had re-contacted the Maudsley Hospital and the relevant information was available in case notes. Two patients had stopped attending as outpatients but had continued to receive prophylactic medication from their general practitioners; one was seen on a home visit, which was conducted for the purpose of another study, while the other was contacted by letter. Only two patients had ceased to receive medical care for their condition and had made no further contact with

psychiatric facilities. Letters were sent to both requesting information; one replied, and the other represents the only subject lost to follow-up.

Hence, at the two-year follow-up, information was obtained concerning 25 of the 26 patients. It must be noted, however, that this clinical information is not as reliable as that obtained at the original nine-month point, when all patients were interviewed using the Present State Examination (Wing *et al.*, 1974). By contrast, the information about maintenance drugs is comparable at the two follow-up points, since in both instances it was obtained from the clinicians looking after the patients or from the clinical records.

### Results

Of the 25 patients successfully followed up two years after discharge, 11 lived with relatives assessed in the original study as showing high EE and 14 lived with low EE relatives. The single patient on whom information was missing came from a low EE home. The relapse rates in the two groups are shown in Table I. These figures have been added to the nine-month relapse rates from the original study to give the cumulative relapse rates over two years for the total group of patients.

It is evident that patients from low EE homes continue to relapse at a low rate over the whole two-year period. The relapse rate of patients in high EE homes slows down considerably after the first nine

**TABLE I**  
*Relationship of relatives' expressed emotion to relapse of schizophrenia*  
(a) Relapse rates at nine months

	No relapse	Relapse	% relapse
High EE	11	10	48%
Low EE	15	1	6%

P = 0.007 (Fisher's exact test)

(b) Two year follow-up of those well at nine months

	No relapse	Relapse	% relapse
High EE	8	3	27%
Low EE	12	2	15%

NS

(c) Cumulative two year relapse rates of original group

	No relapse	Relapse	% relapse
High EE	8	13	62%
Low EE	12	3	20%

P = 0.015

months, but is still almost double that in the low EE group. As a consequence, at the end of two years, the difference between the two groups is substantial and highly significant.

The data on maintenance drugs are presented in Table II. In attempting to interpret these figures, it must be remembered that there was no control initially over whether patients received drugs or not, and that some patients changed their drug status over the course of the two year follow-up. Thus the factor of self-selection for taking or not taking maintenance therapy is operating and may have an overwhelming influence on these data.

The surprising finding is that the significant advantage for high EE patients on maintenance drugs which was evident at nine months had disappeared by the end of two years. By contrast the low EE patients showed no effect of drugs on relapse at nine months, but a significant prophylactic effect at two years. It is important to note that *no relapse occurred in patients from either kind of home who remained on regular maintenance therapy between the nine-month and two-year follow-ups*. The loss of a significant drug effect at two-year follow-up in the high EE group may be explained by the fact that four of the patients who were on regular maintenance drugs at the nine-month point later discontinued them. Two of these relapsed, as did one patient who had been maintained (in our view inappropriately) on controlled-release lithium

**TABLE II**  
*Relationship between relatives' EE, maintenance drugs and relapse of schizophrenia*  
(a) Relapse rates at nine months

	No drugs			Drugs			Significance (Fisher's exact test)
	No relapse	Relapse	% relapse	No relapse	Relapse	% relapse	
High EE	2	7	78%	9	3	25%	P = 0.024
Low EE	6	1	14%	9	0	0%	NS
Total	8	8	50%	18	3	14%	P = 0.023

(b) Cumulative relapse rates at two years

	No drugs			Drugs			Significance (Fisher's exact test)
	No relapse	Relapse	% relapse	No relapse	Relapse	% relapse	
High EE	4	10	71%	4	3	43%	NS
Low EE	3	3	50%	9	0	0%	P = 0.044
Total	7	13	65%	13	3	19%	P = 0.007

carbonate since discharge. At the two-year follow-up we included this latter patient in the group not taking regular maintenance therapy, since we were concerned with a specific anti-schizophrenic drug action.

Of the four high EE group patients who remained well despite the lack of prophylactic medication, two had left home before the two-year follow-up and had thus considerably reduced contact with their high EE relative. Because of the nature of the data collected at the two-year point, we were unable to determine the amount of face-to-face contact between patients and their relatives. However, the outcome in these two cases suggests that this factor may continue to exert an important influence on the relapse rate beyond the nine-month follow-up.

The interpretation of the drug data in low EE group patients is somewhat simpler, since there was relatively little change in drug taking behaviour during the follow-up period. One patient who had been taking medication irregularly at the first follow-up had settled down to regular habits by the two-year point and remained well. Another patient on irregular medication discontinued her drugs altogether ten months after discharge and later relapsed. A further patient who had never been on maintenance drugs relapsed between the nine-month and two-year follow-ups. These two relapses in low EE patients who had been taken off regular drugs tip the balance significantly in favour of maintenance medication for this group over a two-year period after discharge.

### Discussion

The finding of a highly significant difference in relapse rates for schizophrenic patients from high and low EE homes at a two-year follow-up indicates that the association between EE and relapse persists over a considerable period of time. This result supports the assumption "that the attitude shown by the relative toward the patient during the interview is representative of an enduring relationship over time" (Vaughn and Leff, 1976). However, it does not resolve the problem of the direction of cause and effect, which must remain conjectural until the completion of our current trial of social intervention in high EE families.

The drug data from the two-year follow-up are difficult to interpret, for the reasons given above. In particular, the findings in the high EE group probably result from the complex interaction of a number of factors. The findings in the low EE group are more clear-cut, and were the main impetus for this communication. The relapse rates for the low EE group at the nine-month follow-up suggested that maintenance

therapy might not be advantageous for these patients. This was potentially of enormous practical significance, since low EE patients represented 43 per cent of our hospital sample of schizophrenics not living alone, and must constitute a much higher proportion of patients in the community. However, we were always cautious in putting forward this interpretation, on account both of the possible effect of self-selection for drug compliance and of the relatively short follow-up period. The data from the longer follow-up suggest that maintenance drugs do exert a significant prophylactic effect in low EE patients.

It may be asked what the drugs protect the patients against when they are living in a supportive emotional environment. An answer is suggested by our analysis of life events data from the original study (Leff and Vaughn, 1980). There were too few patients relapsing on maintenance therapy to include in the analysis, but a high proportion (56 per cent) of low EE patients who were off drugs and relapsed had experienced an independent life event in the three weeks preceding relapse. It is possible that prophylactic medication protects patients in low EE homes from the impact of independent life events, and that it takes a relatively long time for this effect to become apparent because of the infrequency of such events. However, this speculation is premature, since the effect of self-selection for drug compliance has not yet been controlled for. We need to await the results of a controlled trial of prophylactic medication in which the EE level of patients' homes is simultaneously assessed.

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