The Pilot Project 'Soteria Berne'
Clinical Experiences and Results

LUC CIOMPI, HANS-PETER DAUWALDER, CHRISTIAN MAIER, ELISABETH AEBI, KARL TRÜTSCH, ZENO KUPPER and CHARLOTTE RUTISHAUSER

We still do not know enough about the aetiology and pathogenesis of schizophrenia, nor are the therapeutic methods generated by our definition of it satisfactory. Therefore, innovative approaches to treating schizophrenic patients, even if they only promise some partial progress, warrant consideration. The purpose of the pilot project 'Soteria Berne' is to assess the effectiveness of an open residential programme which has been providing mainly psychotherapy, sociotherapy, and milieu therapy instead of standard pharmacotherapy to about 60 acute schizophrenic patients for more than six years.

The project is based on three underlying concepts: firstly, a multiconditional understanding of schizophrenia, generated by the first author's investigations of the long-term course of illness and his concept of "affect logic", according to which affects/emotions organise and integrate cognitions with which they are comprehensively linked (Ciompi 1987, 1988*a*, 1991). Secondly, on experiences reported by American authors in the 1970s in the first 'Soteria House' near San Francisco, and thirdly, on a number of other psychotherapeutic, sociotherapeutic, and pharmacological strategies which have been developed by other authors.

The three-phase multiconditional evolutionary model of schizophrenia which has been described elsewhere (Ciompi, 1983, 1987, 1988*b*) is based on a modified version of the vulnerability theory formulated by Zubin & Spring (1977), Nuechterlein & Dawson (1984), and others. Schizophrenics are defined as highly sensitive individuals with impaired information-processing capacities reducing their ability to cope with critical life events such as leaving home, first sexual experiences, choosing a job or a spouse, pregnancy and childbirth, and major changes in residence or life circumstances. Under unfavourable conditions, escalating emotional tensions between patient and environment reach a critical point of instability, characterised by the appearance of acute psychotic symptoms. Psychotic decompensation can be defined as a severe developmental crisis, bearing the risk of total failure, but concurrently as a chance to grow and change.

This model has the following therapeutic implications: patients trapped in such a crisis need continual psychotherapeutic help and emotional support. Their difficulties in information-processing should be alleviated in a calm, relaxing, and stimulus-reducing therapeutic setting, where a stable team ensures continuity, and provides patients and their family with clear and reliable information about the illness. However, repeated change in therapeutic setting and therapist, emotional or intellectual overstimulation (Wing & Brown, 1970), 'high expressed emotion' in the family (see Leff *et al*, 1982), and confusing and contradictory information about the therapeutic situation, the purpose of therapy and the methods employed, should all be avoided as much as possible. It follows that the confusing and violent atmosphere endemic in the large admission wards of psychiatric hospitals, where a majority of acute psychotic patients are still being treated, is particularly unsatisfactory. Small treatment facilities offering a sheltered and supportive environment may be more effective in treating schizophrenic patients than such traditional settings.

The San Francisco 'Soteria House' project conceived by Mosher & Menn in the 1970s and investigated by a US National Institute of Mental Health study, is stated to have produced positive results (Mosher *et al*, 1975, 1990; Mosher & Menn, 1978; Matthews *et al*, 1979; Wilson, 1982) with the need for neuroleptic treatment dramatically reduced. The outcome of treatment was predominantly positive for about 200 acute schizophrenic patients maintained on low-dosage or no neuroleptic medication. After six weeks, no significant differences in the level of psychopathology could be found between 28 index patients treated without drugs and 11 control patients receiving a daily average dosage of 700 mg chlorpromazine equivalents (Mosher *et al*, 1990), while after two years, no significant differences were reported in relapse rates or psychopathology. However, the index patients had a better level of social adjustment, experienced their illness to be less distressing, were using significantly lower total doses of neuroleptics, and incurred lower treatment costs. These findings,

which are interesting in connection with the problem of both short- and long-term side-effects of neuroleptics, have to date not been subject to systematic analysis or replication.

The project discussed here borrowed certain therapeutic and administrative tools, such as the 'soft room' and nurse's timetables (see below), from the initial Soteria experiment. The same name (a rough translation from Greek meaning safety, security, salvation) was used, despite the fact that 'Soteria Berne' differs from Mosher's approach in various ways: it is based on a medical model integrating psychosocial and biological factors, the programme is under medical supervision, and it incorporates, in addition, the following therapeutic strategies: (a) the 'educational approach' and family treatment strategy (Leff *et al*, 1982; Anderson, 1983; Hubschmid, 1985) intended to establish close collaboration between family, significant others, and carers; (b) long-term after-care and relapse prevention (Hogarty, 1984; Dauwalder, 1988); (c) inducing positive expectations (Ciompi *et al*, 1979) by providing everyone involved in the therapy process with clear and up-dated information about the illness, its treatment, the long-term risk of relapse, and the chance of recovery, according to follow-up studies which have demonstrated that long-term outcome is substantially more favourable and heterogenous than hitherto believed (Ciompi & Müller, 1976; Bleuler, 1978; Huber *et al*, 1979); (d) administration of low and targeted medication as viable alternatives to drug-free strategies (Carpenter *et al*, 1977, 1987, 1990; Herz *et al*, 1982; Kane *et al*, 1983, 1987; Chiles *et al*, 1989).

The combination of these strategies generated the following eight therapeutic fundamentals of Soteria Berne:

(a) continuous human and psychotherapeutic support in a therapeutic setting that is as normal as possible – small, relaxing, harmonious, and protecting from stimuli
(b) stable and supportive interpersonal bonds with a few carefully selected persons during the psychotic crisis
(c) a stable team of staff members who apply a consistent concept of therapy from starting the acute phase of treatment up to social and vocational rehabilitation
(d) continuous close collaboration with relatives and significant others
(e) providing patients, relatives, and carers with the same information about illness, prognosis, and treatment
(f) jointly negotiating concrete goals and priorities about projected living and job arrangements, and establishing realistic and cautious prospects for the future
(g) using neuroleptics only: in the case of acute danger to self or others, if there are no signs of improvement within 3–4 weeks, or if an impending relapse cannot be prevented in the aftercare phase
(h) systematic aftercare and relapse prevention over a period of at least two years, based on a joint endeavour on the part of patients, family members, and carers to recognise the individual's characteristic prodromal symptoms, and the situations which tend to overtax his/her coping resources and potential modes of dealing with difficult situations.

Method

'Soteria Berne' opened on 1 May 1984, in a 12-room house with a garden in the middle of Berne. The house can accommodate a maximum of six–eight patients and two nurses. Patients admitted were required to meet the following criteria:

(a) aged 17–35
(b) a recent onset of a schizophrenic or schizophreniform psychosis defined according to DSM–III–R criteria (American Psychiatric Association, 1987), not more than one year before admission
(c) at least two of the following six symptoms within the previous four weeks: delusions, hallucinations, thought disorders, catatonia, schizophrenic disorders of affect, severely deviant social behaviour.

The exclusion criteria consisted of dependency on drugs or alcohol, and totally lacking compliance with treatment.

Referral to Soteria is usually made by the local emergency service, but patients are also sometimes referred by local psychiatric hospitals or private persons. Random admission is attempted by accepting patients who fulfil the above-mentioned criteria whenever a bed is available. Some bias is however created by the fact that severely agitated peracute patients are quite often directly referred to nearby psychiatric hospitals without passing through the emergency service, and compulsory treatment is generally not possible in the open 'Soteria' setting. Furthermore, some patients with longer-lasting illness, chronic course, and severe negative symptoms have been admitted under different circumstances. Therefore, the index population may have contained patients who were somewhat easier to treat, but also with less favourable outcome prospects than a typical population of acute patients with a shorter duration of illness and no severe negative symptoms.

The therapeutic team consists of a part-time medical director, five psychiatric nurses, and four paraprofessionals selected according to their motivation, life experience, and ability to show empathy and interpersonal involvement with schizophrenic patients. Two staff members always work in overlapping 48-hour shifts followed by several days off. The team has weekly half-day meetings to review cases. Once every

two weeks the team is supervised by an experienced psychotherapist.

Treatment is divided into four phases: each patient is assigned his own carer who stays constantly with him during the initial and most acute phase. He is cared for in the 'soft room', which is a large and pleasant one on the ground floor. There are only cushions and mattresses in this room so as to avoid any sort of danger or over-stimulation. The main purpose of this phase is to reduce anxiety and tension by providing the patient with constant human support and guidance by calming him down, or by implementing relaxation techniques such as massage, holding hands, short walks, or other physical activities. Next comes the *activating phase*, characterised by gradually getting back into touch with reality – first by negotiating simple household and gardening chores within the sheltered environment of the therapeutic setting, and later doing the shopping and going for walks near the house. The *third phase* focuses on gradual social and vocational rehabilitation by expanding the patient's social network and helping him to make the transition from hospital to independent living by providing part-time employment or placement in a sheltered workshop, etc. The *fourth phase*, which lasts for at least two years after discharge, focuses on prevention of relapse and psychosocial stabilisation. It is carried out by a mobile community-based social-psychiatric team or by private psychiatrists.

Psychosocial therapy focuses on the patient's basic life problems and on treating the experience of psychosis as an integral part of the patient's life. At the beginning, each patient is offered ongoing support and guidance as required, by two carers who are specifically assigned to do this. Eventually, he might be offered individual or family therapy, according to the circumstances. Relatives and significant others are systematically involved in the therapy process: they are informed about the illness whenever an appropriate situation arises and information is also disseminated in problem-centred workshops which take place every six weeks. Psychoanalytical and systemic family therapeutic approaches continually figure in psychosocial interventions, for example, in efforts to strengthen personal identity, to clarify intrafamilial responsibilities, to reinforce interpersonal and generational boundaries, or to negotiate concrete priorities and objectives, for example housing or vocational arrangements.

Results

The following can be reported at present: clinical observations, some data concerning the immediate outcome on discharge of 60 patients treated at Soteria between 1 May 1984 and 30 April 1990, and outcome comparisons over a two-year period between the first 14 index and control patients. More detailed information, including methods, is given elsewhere in a German-language publication (Ciompi *et al*, 1991).

At the reference date of 30 April 1990, 56 out of 60 patients treated (36 women and 24 men aged 17.7–36.5 years, mean 23.8 years, s.d. 3.5 years) had been discharged. Of these, 39 met DSM-III-R criteria for schizophrenia and 14 for

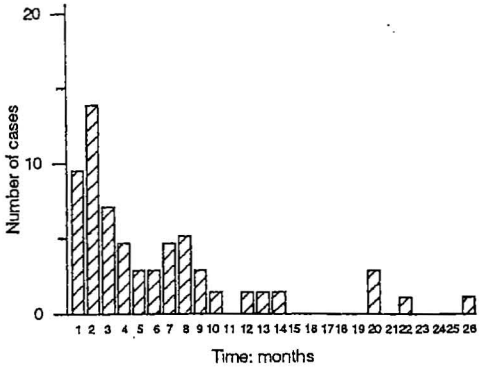

Fig. 1 Duration of treatment of patients at Soteria Berne.

schizophreniform psychosis (3 diagnoses were uncertain). The duration of illness varied widely, averaging around 1.37 years (s.d. 2.52); duration of treatment at Soteria varied between 3 and 765 days (mean 153.8 days, s.d. 169.9 days). The great majority of patients stayed at Soteria for an average of 1–4 months (Fig. 1).

On the whole, the first three phases of the treatment approach may be considered quite successful. There were only three incidents within six years when a patient incurred serious harm to himself or others. Several patients who remained drug-free for a period ranging from several weeks

Table 1
Measures of outcome for patients

Measure	No. of cases
Psychopathology	
category 1: no psychotic symptoms (full remission)	21
2: minimal residuals	12
3: medium residuals	7
4: no improvement, or impairment	4
5: uncertain	7
Housing situation	
category 1: normal housing situation (alone or with colleagues)	19
2: with parents	14
3: sheltered community or half-way home	6
4: psychiatric hospital	9
5: uncertain	3
Occupational situation	
category 1: normal work or school	20
2: part-time work	5
3: sheltered workshop or rehabilitation centre	5
4: unoccupied	19
5: uncertain	2
Global outcome rating	
1. good (category 1 or 2 in all three ratings)	19
2. rather good (category 1 or 2 in two of three ratings)	12
3. rather poor (category 3 or 4 in two of three ratings)	9
4. poor (category 3 or 4 in three ratings)	9
5. uncertain (category 'uncertain' in two or three ratings)	2

to a number of months had less severe psychotic symptoms, although the time spans for this effect to occur were usually longer than those reported by Mosher *et al* (1975; Mosher & Menn, 1978). This was one of the reasons for the increased implementation of targeted or low-dose neuroleptic medication strategies as time passed. However, relapse prevention often proved to be more difficult than expected during the aftercare phase of the programme. This was mainly because many patients and their relatives refused to acknowledge either the patient's special vulnerability or the necessity of guidance and care, even though they had been informed about the nature of the illness. Medication was, therefore, administered on an as-needed basis during this phase of treatment.

Five of the 56 patients were discharged within 10 days and are therefore not included in the following statistical analysis. Twenty of the 51 remaining patients received no neuroleptic treatment at Soteria, and 31 received neuroleptics for approximately 2/3 of their stay in average daily doses of 172.5 mg chlorpromazine equivalents (calculated according to Haase, 1982) or 94.2 mg per day of total treatment. This corresponds to approximately 1/3 of the usual European, and about 1/5–1/10 of the usual American doses. Psychopathology upon release, housing situation and occupational situation after release, and a global outcome rating were as shown in Table 1.

In 31 (61%) out of 51 cases, the immediate global outcome was classified as 'good', or 'fairly good', and in 18 (35.3%) as 'rather poor' or 'poor', suggesting that the programme was successful in a major subgroup, but unsuccessful in a minor subgroup of psychotic patients. Immediate outcome is shown in Fig. 2.

A number of significant differences were found between 'responders' and 'non-responders' (Table 2): for certain aspects of outcome, there were better results in women than in men, in patients with a shorter duration of illness, and in schizophreniform psychoses v. schizophrenia defined according to DSM-III-R criteria. Surprisingly, patients who received no or very low-dosage medication demonstrated significantly better results. Additional statistical comparisons between 'extreme' subgroups (category 1 v. category 4) and a number of non-significant trends point in the same direction.

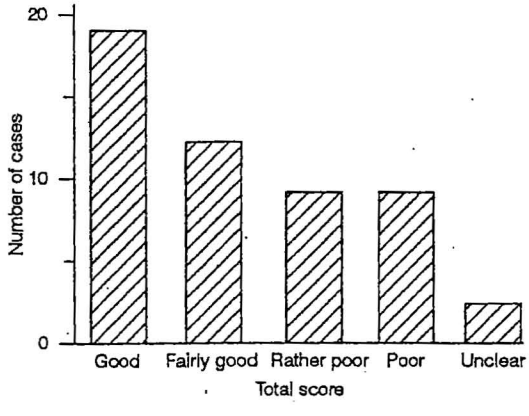

Fig. 2 Immediate outcomes for 51 patients.

Table 2
Correlations between possible predictors and immediate outcomes

	Housing ($n=48$)	Work ($n=49$)	Psycho-pathology ($n=44$)	Total score ($n=49$)
Sex (men/women)	NS	NS	NS	−0.349*
Age (<24 years/>24 years)	NS	NS	NS	NS
Duration of illness (<1 year/>1 year)	0.337*	NS	NS	NS
Diagnosis (schizophrenia/schizo-phreniform psychosis)	NS	NS	−0.321*	NS
Duration of treatment (<6 months/>6 months)	NS	NS	NS	NS
Neuroleptic medication (no/yes)	NS	0.323*	NS	0.317*
Duration of medication (<mean/>mean)	NS	NS	NS	NS
Mean dose (<172 mg/>172 mg)	NS	NS	NS	NS
Total dose (<mean/>mean)	NS	NS	NS	NS

*$P<0.05$.

Comparisons were made of the two-year-outcomes between the first 14 index cases and an equal number of matched control cases from four different institutions (the milieu therapy-orientated private psychiatric hospital 'Schlössli' in Oetwil, Switzerland; a modern psychiatric ward at Lucerne General Hospital in Switzerland; the traditional State Psychiatric Hospital in St. Urban/Lucerne in Switzerland; and the State Psychiatric Hospital "Philips-Hopsital" near Riedstadt in Germany). The Ward Atmosphere Scale (Moos, 1974; Henrich *et al*, 1979) significantly differentiated Soteria from the four control institutions with respect to therapeutic atmosphere (Fig. 3).

Matched-pair comparisons were made by matching index and control patients with respect to their age, sex, and the two most relevant predictors, premorbid social adjustment and prevailing positive or negative symptoms. The results of this comparison are summarised in Fig. 4: no significant differences were found for 7 out of a total of 9 outcome and progression variables. The variables included (a) psychopathology measured by BPRS (Overall & Gorham, 1962); (b) housing situation; (c) job situation; (d) global outcome combining a–c (cf. above); (e) global autonomy score (score comprised of 1. legal responsibility; 2. living alone or with one's family; 3. job and financial situation; 4. recreational activities; 5. social contacts (cf. Hubschmid & Aebi, 1986); (f) relapse rate; and (g) average treatment costs. In both groups, 10 out of 14 cases (71.4%) had relapses over 2 years; 9 index patients and 7 control patients had to be readmitted as day- or in-patients. Significant differences were found only for (g) mean daily dose ($P<0.01$) and (h) total dose ($P<0.05$).

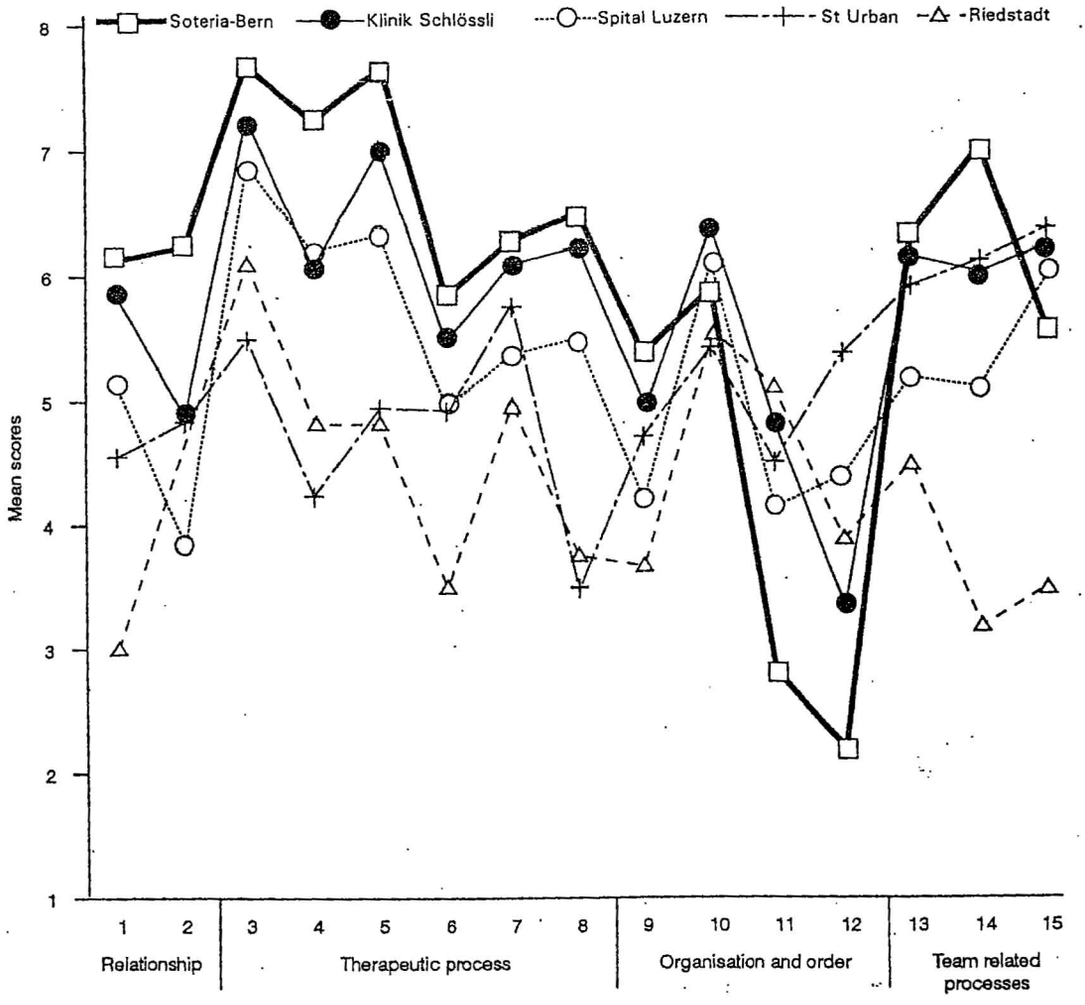

Fig. 3 Ward atmosphere Soteria v. control-groups for the following factors: 1. involvement, 2. spontaneity, 3. autonomy, 4. practical orientation, 5. orientation to the future, 6. therapists as models, 7. reinforcement, 8. scope of programme, 9. transparency of concepts, 10. transparency of programme, 11. control by staff, 12. order and organisation, 13. team coherence, 14. team hierarchy and 15. team information flow.

Seven out of 14 index patients and all 14 control patients received neuroleptic treatment during the initial in-patient treatment phase. During aftercare, 8 out of 14 index cases and 12 out of 14 control cases were treated with neuroleptics. Four index patients did not receive neuroleptics either during the initial treatment phase or during after-care; all four cases were diagnosed as having schizophreniform psychoses and had a good outcome. Index patients received significantly smaller daily and cumulative neuroleptic doses than control patients: during the in-patient phase, the differences amounted to more than 1:30 (84 mg v. 2615 mg average daily dose) and more than 1:7 (14.694 mg v. 105.198 mg average total dose), whereas there were no significant differences during after-care (99 mg v. 103 mg average daily dose, and 68.968 mg v. 67.713 mg average total dose) (Fig. 4). During the total two-year period of observation, the difference amounts to about 1:2 (83.662 mg v. 172.911 mg average total doses).

Correlations which were found between possible predictors and housing situation, job situation, psychopathology, and combined global outcome are shown in Table 3.

Better outcomes (partly for both index-patients and control patients, and partly only for the one or the other) were statistically correlated with female sex, above-average age, higher professional training, better premorbid social functioning, higher premorbid autonomy, shorter duration of illness and of previous treatment, and absence of previous

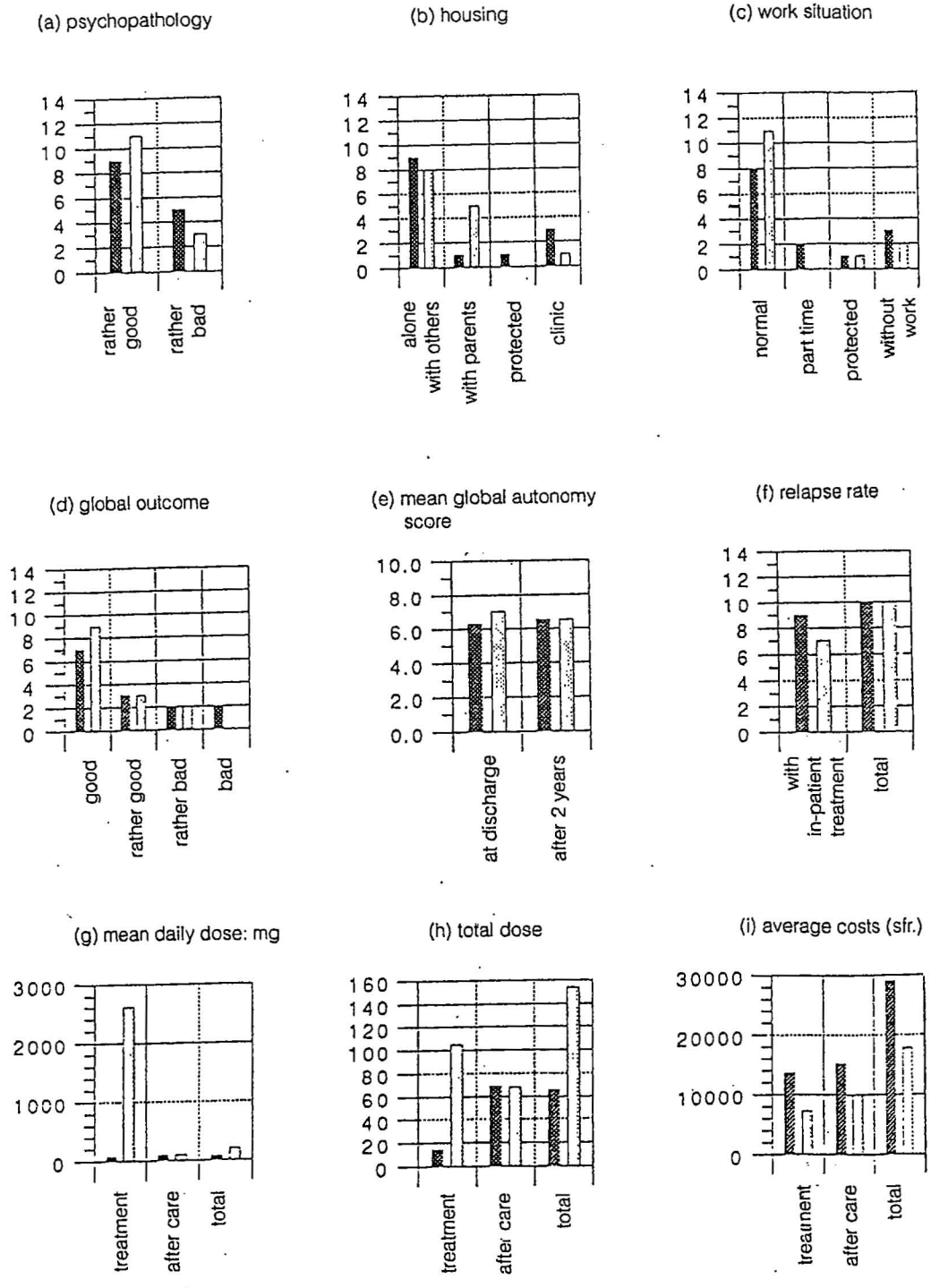

Fig. 4 Comparison of index (■) and control (□) patients after two years.

Table 3
Correlations between possible predictors and two year outcome

	Housing	Work	Psychopathology	Total score
Sex (men/women)	−0.51*[1]	0.38*[3]	NS	NS
Age (<24 years/>24 years)	NS	NS	NS	−0.37*
Diagnosis (schizophrenia/schizophreniform psychosis)	NS	NS	NS	NS
Professional formation (low/high)	NS	NS	−0.56*[3]	NS
Premorbid social functioning (low/high)	−0.57*[3]	NS	NS	NS
Psychosocial autonomy (low/high)	−0.53*[3]	NS	NS	NS
Outbreak of illness (<6 months/>6 months)	0.61**[2]	NS	NS	NS
Previous treatment (<6 months/>6 months)	0.55*[2]	NS	NS	NS
Previous psychotic episodes (no/yes)	0.54*[2]	NS	NS	NS
Neuroleptic medication				
Treatment: (no/yes)	NS	NS	NS	NS
Aftercare: (no/yes)	0.51**[1]	NS	0.64*[2]	0.58*
Duration of medication				
Treatment: (</>61 days)	0.56**[1]	0.47*[1]	NS	0.49*[1]
Aftercare: (</>284 days)	NS	NS	NS	NS
Mean dose				
Treatment: (</> 258 mg)	NS	0.73*[2]	NS	NS
Aftercare: (</> 292 mg)	1.00***[3]	0.67*[3]	NS	0.67*[3]
Total dose				
Treatment: (</> 15 g)	1.00***[2]	NS	0.73*[2]	0.73*[2]
Aftercare: (</> 69 g)	NS	NS	NS	NS

1. All patients ($n = 28$).
2. Index patients ($n = 14$).
3. Control patients ($n = 14$).
*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

psychotic episodes. In terms of medication, outcomes were statistically better for patients who did not receive neuroleptics during after-care, or received them for a shorter than average duration and at higher than average doses during the treatment phase, but at lower than average doses during after-care. Furthermore, index-patients who received lower than average total doses during the treatment phase had statistically better outcomes.

On the whole, practically all correlations concerning general and social predictors were in the direction expected according to the literature (e.g. Hubschmid & Ciompi, 1990). However, they contradicted expectation concerning the absence of the predictive power of diagnostic subgroups and the generally more favourable aspects of outcome for patients who were maintained on targeted, low-dose or no-neuroleptic medication strategies.

Discussion

More than six years of experience with a significantly sized group of schizophrenic patients show that the innovative therapeutic approach implemented in Soteria Berne is applicable to clinical practice, and in terms of immediate outcome, has been successful in about two-thirds of cases. It is particularly interesting that for certain patients, a remission of symptoms can occur without neuroleptic medication, and that drug-free or low-dose medication strategies have been correlated with better outcomes in several respects. The results of the two-year prospective study on the first 14 index cases and matched controls are also surprising insofar as they show no significant differences between standard treatment and the Soteria approach with respect to psychopathology, housing arrangements, job situation, combined global outcome, social autonomy, and relapse rate, in spite of much smaller daily and total doses of neuroleptic medication. This confirms findings by Mosher *et al* (1975, 1990); and by Mosher & Menn (1978). On the other hand, treatment costs were significantly higher for the Soteria patients.

Thus, it seems that in a special therapeutic setting which offers adequate and continual emotional support, comparable outcome in the long term can

be achieved despite a substantial reduction in the cumulative use of medication, while some drug-free patients are found to have positive outcomes after two years of study. This finding is particularly interesting with regard to tardive dykinesia which has some relationship to the cumulative neuroleptics administered (Carpenter, 1990). The findings reported are compatible with the hypothesis of central organising and integrating functions of the affects (Ciompi, 1991), and partially validate the underlying psychosociobiological understanding of schizophrenia derived from the concept of 'affect logic' (Ciompi, 1988*a*,*b*). A unilaterally biological concept of schizophrenia would hardly suffice to explain them.

All these findings, however, should be interpreted with great caution. Statistical correlations in favour of patients who received no or low-dose neuroleptic medication do not provide evidence for the hypothesis that drug-free treatment is superior to conventional neuroleptic medication strategies, because only more difficult cases were given neuroleptics or higher doses of them. Furthermore, the number of matched-pair comparisons over two years was small, and the influence of important mediating variables such as duration and dosage of medication, environmental influences, spontaneous remission rates, etc. has not yet been sufficiently investigated.

The practically identical relapse rates for both medication strategies can be explained by the fact that both groups were maintained on roughly identical total dose levels during after-care. Therefore, slightly higher rates of readmission among index patients cannot be related to differences in drug prophylaxis. Soteria patients might, however, be less reluctant to return to the treatment facility than patients treated in traditional hospitals.

Higher treatment costs in Soteria probably have less to do with the low- or no-medication strategies adopted than with the prolongation of treatment, caused by the inclusion of phase 3 (rehabilitation) in the treatment process. Furthermore, higher initial costs are to be expected in a pilot project. It is certainly possible to cut costs by referring patients to less expensive rehabilitation facilities and this has already been initiated. However, in the face of the immeasurable human and economic costs of the unsolved problem of schizophrenia, financial reasons alone should certainly not hinder the search for improved therapeutic methods.

Although it appears that under emotionally favourable conditions, a low- or no-medication strategy, combined with psychotherapy and sociotherapy is a feasible and effective alternative to conventional treatment for schizophrenic patients, the question of how to differentiate 'responders' from 'non-responders' has not yet been clarified. Some of the findings reported (better results for schizophreniform psychoses, women, and premorbidly more autonomous first-episode cases with short duration of illness and no previous treatment elsewhere) support the assumption that a drug-free treatment condition, focusing on milieu therapy and psychotherapy, may be more suitable for new cases suffering from less severe disorders. Moreover, the fact that the last three predictors of favourable outcome are valid only for index patients and not for control patients (see Table 2) suggests that this therapeutic approach might be suitable mainly for patients who did not have the chance to learn the typical roles and behavioural patterns characteristic of psychiatric in-patients.

Finally, on the subjective level of experience, most patients and relatives found treatment at Soteria to be less upsetting and less stigmatising than traditional methods. Soteria patients appeared to be more able to integrate their psychosis into their lives and personal development than patients being treated in customary psychiatric facilities.

On the whole, the findings reported provide some hope of improving methods of treating at least one major subgroup of psychotic patients by using the Soteria approach.

References

ANDERSON, C. (1983) A psychoeducational model of family treatment for schizophrenia. In *Psychosocial Intervention in Schizophrenia* (eds H. Stierlin, L. C. Wynne & M. Wirshing), pp. 227–234. Berlin: Springer.

BLEULER, M. (1978) *The Schizophrenic Disorders. Long-term Patient and Family Studies*. New Haven: Yale University Press.

CARPENTER, W. T., MCGLASHAN, T. H. & STRAUSS, J. S. (1977) The treatment of acute schizophrenia without drugs: an investigation of some current assumptions. *American Journal of Psychiatry*, **134**, 14–20.

——, HEINRICHS, D. W. & HANLON, T. E. (1987) A comparative trial of pharmacologic strategies in schizophrenia. *American Journal of Psychiatry*, **144**, 1466–1470.

——, ——, ——, *et al* (1990) Continuous versus targeted medication in schizophrenic outpatients. Outcome results. *American Journal of Psychiatry*, **147**, 1138–1148.

CHILES, J. A., STERCHI, D., HYDE, T., *et al* (1989) Intermittent medication for schizophrenic outpatients: who is eligible? *Schizophrenia Bulletin*, **15**, 117–120.

CIOMPI, L. (1981) Wie können wir Schizophrenen besser behandeln? Eine synthese neuer Krankheits- und Therapickonzepte. *Nervenarzt*, **52**, 506–515.

—— (1983) How to improve the treatment of schizophrenics: A multicausal illness concept and its therapeutic consequences. In *Psychosocial Intervention in Schizophrenia* (eds H. Stierlin, L. C. Wynne & M. Wirsching), pp. 53–63. Berlin: Springer.

—— (1987) Toward a coherent multidimensional understanding and therapy of schizophrenia: converging new concepts. In *Psychosocial Treatment* (eds J. S. Strauss, W. Böker & H. D. Brenner), pp. 43–62. Toronto-Lewiston N.Y.-Bern-Stuttgart: Huber.

—— (1988*a*) *The Psyche and Schizophrenia. The Bond between Affect and Logic*. Cambridge, Mass.: Harvard University Press.

——— (1988*b*) Learning from outcome studies. Toward a comprehensive biological-psychosocial understanding of schizophrenia. *Schizophrenia Research*, **1**, 373–384.

——— (1991) Affects as central organising and integrating factors. A new psychosocial/biological model of the psyche. *British Journal of Psychiatry*, **159**, 97–105.

——— & MÜLLER, C. (1976) *Lebensweg und Alter der Schizophrenen. Eine Katamnestische Langzeitstudie bis ins Alter.* Berlin: Springer.

———, DAUWALDER, H. P. & AGUE, C. (1979) Ein Forschungsprogramm zur Rehabilitation psychisch Kranker, III. Längsschnittuntersuchungen zum Rehabilitationserfolg und zur Prognostik. *Nervenarzt*, **50**, 366–378.

———, DAUWALDER, H. P., MAIER, CH. *et al* (1991) Das Pilotprojekt "Soteria Bern" zur Behandlung akut Schizophrener. *Nervenarzt*, **62**, 428–435.

DAUWALDER, H. P. (1988) Psychische Gesundheit: Warum "präventives Verhalten" und nicht "Prävention"? Erfahrungen aus der Sekundärprävention der Schizophrenie. In *Lebensweltbezogene Prävention* (ed. W. Stark), pp. 293–304. Freiburg: Lambertus.

———, CIOMPI, K., AEBI, E., *et al* (1984) Ein Forschungsprogramm zur Rehabilitation psychisch Kranker IV. Untersuchung zur Rolle von Zukunftserwartungen bei chronisch Schizophrenen. *Nervenarzt*, **55**, 257–264.

HAASE, H. J. (1982) *Therapie mit Psychopharmaka und anderen seelisches Befinden beeinflussenden Medikamenten* (2nd edn). Stuttgart: Schattauer.

HENRICH, G., DE JONG, R., MAI, N., *et al* (1979) Aspekte des therapeutischen Klimas – Entwicklung eines Fragebogens. *Zeitschrift für Klinische Psychologie*, **8**, 41–55.

HERZ, M. J., SZYMANSKI, H. V. & SIMON, Y. C. (1982) Intermittent medication for stable schizophrenic outpatients: an alternative to maintenance medication. *American Journal of Psychiatry*, **139**, 918–922.

HUBER, G., GROSS, G. & SCHUETTLER, R. (1979) *Schizophrenie. Eine verlaufsund sozialpsychiatrische Langzeitstudie.* Berlin: Springer.

HUBSCHMID, T. (1985) Von der Familientherapie zur Angehörigenarbeit oder vom therapeutischen zum präventiv-rehabilitativen Paradigma in der Schizophreniebehandlung. *Fortschritte der Neurologie und Psychiatrie*, **53**, 117–122.

——— & AEBI, E. (1986) Berufliche Wiedereingliederung von psychiatrischen Langzeitpatienten. Eine katamnestische Untersuchung. *Social Psychiatry*, **21**, 152–157.

——— & CIOMPI, L. (1990) Prädiktoren des Schizophrenieverlaufs – eine Literaturübersicht. *Fortschritte der Neurologie und Psychiatrie*, **58**, 359–366.

KANE, J. M., RIFKIN, A., WOERNER, M., *et al* (1983) Low-dose neuroleptic treatment of outpatient schizophrenics I – Preliminary results for relapse rates. *Archives of General Psychiatry*, **40**, 893–896.

——— & LIEBERMAN, J. A. (1987) Maintenance pharmacotherapy in schizophrenia. In *Psychopharmacology: The Third Generation of Progress* (ed. H. Y. Meltzer), pp. 1103–1109. New York: Raven Press.

LEFF, J. P., KUIPERS, L., BERKOWITZ, R., *et al* (1982) A controlled trial of social intervention in the families of schizophrenic patients. *British Journal of Psychiatry*, **141**, 121–134.

MATTHEWS, S. M., ROPER, M. T., MOSHER, L. R., *et al* (1979) A non-neuroleptic treatment for schizophrenia: analysis of the two-year postdischarge risk of relapse. *Schizophrenia Bulletin*, **5**, 322–333.

MOOS, R. (1974) *Evaluating Treatment Environments. A Social Ecological Approach.* New York: Wiley.

MOSHER, L. R., MENN, A. J. & MATTHEWS, S. (1975) Evaluation of a homebased treatment for schizophrenics. *American Journal of Orthopsychiatry*, **45**, 455–467.

——— & ——— (1978) Community residential treatment for schizophrenia: two-year follow-up data. *Hospital and Community Psychiatry*, **29**, 715–723.

———, VALLONE, R. & MENN, A. (1990) The treatment of acute psychosis without neuroleptics. New data from the Soteria project. Lecture presented at the Annual Meeting of the American Psychiatric Association, New York.

NUECHTERLEIN, K. H. & DAWSON, M. E. (1984) A heuristic vulnerability/stress model of schizophrenic episodes. *Schizophrenia Bulletin*, **10**, 300–312.

OVERALL, K. E. & GORHAM, D. R. (1962) The Brief Psychiatric Rating Scale. *Psychological Reports*, **10**, 799–812.

WILSON, H. S. (1982) *Deinstitutionalized Residential Care for the Mentally Disordered. The Soteria House Approach.* New York: Grune & Stratton.

WING, J. K. & BROWN, G. W. (1970) *Institutionalism and Schizophrenia.* London: Cambridge University Press.

ZUBIN, J. & SPRING, B. (1977) Vulnerability – a new view on schizophrenia. *Journal of Abnormal Psychology*, **86**, 103–126.

*Luc Ciompi, Prof Dr med; Hans-Peter Dauwalder, Prof Dr phil; Christian Maier, Dr med; Elisabeth Aebi, lic phil; Karl Trütsch, Dr med; Zeno Kupper, Dr phil; Charlotte Rutishauser, lic phil; *Sozialpsychiatrische Universitätsklinik, Bern, Switzerland*

*Correspondence