

# Soteria Berne: an innovative milieu therapeutic approach to acute schizophrenia based on the concept of affect-logic

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*The name "Soteria" stands for an alternative low-drug milieu-therapeutic approach to acute schizophrenia that was first implemented by Mosher and Menn in San Francisco, and since 1984 further developed by Ciompi and co-workers in Berne, on the basis of their concept of affect-logic, that emphasizes the often neglected influence of emotional factors in schizophrenia. In both settings, equal and even partly better therapeutic results, compared with traditional methods, were obtained with much lower doses of antipsychotics and comparable daily costs. Basic concepts, practical proceedings and empirical findings of Soteria Berne are reported, and their theoretical and practical implications for mainstream psychiatry are discussed. They support the hypothesis of a crucial pathogenetic and therapeutic-preventive role played by emotional factors not only in the so-called affective psychoses, but also in schizophrenia.*

**Key words:** Schizophrenia, milieu-therapy, psychotherapy, pharmacotherapy, cost-efficiency evaluation

It is generally admitted that complex interactions between biologic-genetic and perinatal, environmental-situational and psychological factors play a crucial role both in pathogenesis and in short-term and long-term evolution of schizophrenia. The vulnerability-stress model first proposed by Zubin and Spring (1) and further elaborated by Nuechterlein and Dawson (2) and – with a special emphasis on emotional and biographic aspects – also by ourselves (3) provides a valuable basis for a conceptual integration of widely heterogeneous biological, social and psychological influences. Furthermore, various integrative therapeutic and/or preventive strategies were explicitly or implicitly based on the vulnerability-stress concept, from Anderson's (4) so-called educational model, to Hogarty's (5) psycho-social approach and to Alanen's (6) "need-adapted therapy", to select just a few examples.

From a comprehensive bio-psycho-social point of view, a pilot-project called Soteria (in Greek: delivery, salvation, protection), specially focused on environmental and emotional factors, was therefore of particular interest. Loren Mosher and Alma Menn conducted Soteria from 1971 through 1983 in a small community-based experimental setting near San Francisco. There, young acute schizophrenia patients were primarily treated by psychotherapeutic and milieu-therapeutic methods. Inspired by a phenomenological and existentialistic approach to mental illness, Mosher claimed that continuous human closeness with the psychotic patient ("being with") in a small, supporting and protective non-hospital setting allows to achieve similar or better therapeutic effects than with the traditional hospital-based treatment, almost without using antipsychotic drugs. This claim got support by evaluative empirical research (7-11). A first European replication of the original Soteria approach was eventually implemented in 1984 by one of us in Berne, Switzerland on partly different conceptual bases, in order to

verify and, if indicated, to remodel Mosher's approach. Soteria Berne proved to be very successful, since it is still in operation after 20 years of existence (12,13). From Berne, the Soteria idea spread out to a number of other places, predominantly in Germany (14).

The aim of the present paper is to give an overview of the concept, the practical proceedings and the empirical findings of Soteria Berne, and to compare them with Mosher's original observations and other available information on similar projects. Finally, we discuss the potentials and limits of the Soteria approach to psychosis, and try to situate it in current mainstream psychiatry.

## CONCEPTUAL BASES OF SOTERIA BERNE

Our point of departure were converging results of studies on long-term course of schizophrenia over several decades that revealed the existence of considerably better outcome potentials, under favorable conditions, than hitherto known (15-24). Additional support for the assumption that environmental factors were more important than so far admitted came from early studies on the impact of community-based social and vocational rehabilitation (25-29), from research on the so-called "syndrome of hospitalism" in unfavorable institutional settings (30), from Scandinavian investigations on the influence of rearing conditions in adopted children at risk (31-34), from transcultural studies revealing significantly better long-term outcomes in less developed countries (35,36), and – especially important for the concepts described below – from the detection of robust statistical correlations between critically increasing emotional tensions (the so-called high expressed emotions) in the environment of persons at risk on the one hand, and the outbreak of psychotic symptoms on the other (37-39). Last but not least, extended personal psychotherapeutic and

sociotherapeutic experiences with psychotic patients had a major impact on the conceptualization of Soteria Berne.

Eventually, we integrated all the mentioned elements of knowledge into a comprehensive psycho-socio-biological meta-theory of affective-cognitive interactions named “affect-logic”. This is a not entirely satisfying translation of the German term “Affektlogik”, implying constant circular interactions between emotion and cognition in all mental functions. A related model of the long-term evolution of schizophrenia in three phases served as the main basis for our therapeutic strategies both in Soteria Berne and in the network of community-based psychiatric institutions in which the Soteria project was imbedded (40-42). According to the central thesis of affect-logic, ubiquitous circular interactions between emotion and cognition exert multiple organizing and integrating effects on mental activity and behavior. Cognition-triggered overt or covert emotions deeply influence on their turn all cognitive activity by regulating attention and perception, memory and combinatory thought and behavior according to context and experience. Of particular importance is also the fact that critically increasing emotional tensions are capable of provoking sudden global shifts (bifurcations) in the prevailing patterns of feeling, thinking and behaving – e.g. from a “fear-logic” to a “rage-logic”, from a “logic of peace” to a “logic of war”, from love to hate, or, in vulnerable individuals, from normal mental functioning to psychosis.

Although often neglected, emotional effects are of crucial importance during all phases of the mentioned model of psychotic evolutions. During phase 1 (the pre-morbid period, from conception until the outbreak of psychosis), a vulnerable personality structure is gradually built up through circular interactions between unfavorable genetic/biological dispositions and traumatic life experiences such as inconsistent rearing conditions or deeply disturbed family situations. During phase 2, characterized by the outbreak of manifest psychosis, this vulnerable “terrain” is critically overtaxed by increasing emotional tensions, related to stressors such as psychosocial problems of adolescence and early adulthood, professional difficulties, drug abuse, hormonal changes, mating, childbirth, etc. During phase 3 (long-term evolution), remissions or relapses are largely conditioned by the changing interplay of personality structure, therapeutic or preventive strategies, and stressful or protective environmental factors such as family attitudes (in particular high or low expressed emotions), socio-economic and cultural conditions, institutional environment.

In the following years, the concept of affect-logic was further refined and complemented by additional long-term (43) and chaos-theoretical aspects (44,45), and by the increasing importance attributed to a system-therapeutic approach (46,47).

## **THERAPEUTIC CONSEQUENCES AND THEIR PRACTICAL REALIZATION IN SOTERIA BERNE**

On these conceptual bases, and at variance with Mosh-

er's original approach, our primary goal was not to develop an almost drug-free treatment strategy, but to implement an as good comprehensive psycho-socio-biological treatment of acute schizophrenia patients as possible, by combining all available psycho-socio-biological knowledge on therapeutic factors in innovative ways, including the Soteria experience. Given the central role that emotional tensions play, from the perspective of affect-logic, in the outbreak and/or exacerbation of psychotic symptoms, the creation of a therapeutic setting that consistently reduces emotional tension appeared as crucial. Most standard hospital settings violate, in fact, this postulate in many ways. They increase emotional tensions, e.g. by large, promiscuous and often violent admission wards, by traumatic admission practices, by privation from personal atmosphere and belongings, by lack of continuous personalized relationships and conceptual discontinuities related to rapid changes from one ward or institution to another, by too precipitous discharge practices, and also by lack of adequate information for patients and families. Under such conditions, the only way of reducing tension is high-dose antipsychotic medication. As an alternative, we formulated the following eight therapeutic principles as practical guidelines for Soteria Berne.

*Small, relaxing, stimulus-protecting and as “normal” as possible therapeutic setting.* Instead of treating acute psychotic patients in a traditional hospital setting, we admit them in a small, open, friendly and family-like house with a nice garden located in the midst of the community, where eight patients and the team members on duty find a pleasant living space.

*Continual personalized “being with” the psychotic patient.* During the most acute psychotic stage (phase 1), the patient is never let alone, but round the clock accompanied in a pleasant so-called “soft room”. The primary task of the accompanying person is to calm him down, not so much by sophisticated psychotherapeutic techniques but by silent or talking “being-with”, sometimes also by simple activities such as handcraft, drawing, playing, soft foot-massages, by walking or jogging together, or by other relaxing activities according to personal intuition. Eventually, the patient is gradually integrated in the daily life of the therapeutic community (phase 2), and finally prepared for discharge, after-care and relapse-prevention (phase 3).

*Personal and conceptual continuity.* This is assured by a small and closely collaborating therapeutic team, backed by a part-time psychiatrist. It consists of nine persons working in overlapping 48 hour-shifts, so that at least two team members can continually be present. Team members are carefully selected for their personal qualities and life experiences, with an equilibrated mix of gender, age and psychiatric vs. other professional backgrounds. Two team members (usually a man and a woman) are especially assigned to each patient. For half a day per week, the whole team meets for information exchange and coordination. Monthly, it gets an external supervision by an experi-

enced psychotherapist, and meets fortnightly for an hour of "intervision" focused on case managing problems and team dynamics.

*Close collaboration with family members and other important persons of reference.* From the first day on, close and collaborative relations are systematically built up with family members and other important persons, on the base of personal trust, extensive exchange of information, and liberal visiting politics. In addition, "educational"-style discussions are monthly organized for family members and other close persons.

*Clear and concordant information for patients, family and staff.* In order to minimize tension-creating confusions and misunderstandings, as clear, complete and concordant information as possible on the illness itself, its prognostic risks and chances, the methods of treatment and relapse prevention etc. is given on every possible occasion to patients, family members and to the team members themselves, on the basis of the above-mentioned three-phase evolutionary model of schizophrenia.

*Elaboration of common realistic goals and expectations.* Already in an early phase of treatment, concrete therapeutic aims and priorities concerning future housing and work are systematically elaborated with each patient and family, on the basis of realistic expectations on risks and chances.

*Consensual low dose antipsychotic strategies.* These strategies (48-50), focused on the reduction of otherwise not controllable states of tension, are used in close collaboration with patient and family, with the final aim of controlled self-medication.

*After-care and relapse prevention for at least two years.* This is systematically prepared both by extensive education on personal prodromes and prophylactic proceedings, and by the establishment of contacts with external therapists and follow-up institutions.

Despite minor adaptations over the years, these eight principles remained basically the same since the implementation of Soteria Berne in 1984. They overlap largely with Mosher's initial practice in San Francisco, in which we however also integrated educational techniques, a systemic family approach and modern rehabilitation and relapse prevention strategies mainly focused on affective-cognitive valorization ("empowerment") and relaxation. Other differences concern the composition of the Soteria team (also including psychiatric professionals) and more flexible medication strategies that gradually tend to resemble current low-dose medication techniques with "atypical" antipsychotics.

## CLINICAL OBSERVATIONS

Over the past 20 years, several hundred schizophrenia patients (about 30 per year in the beginning, nowadays around 50) have been treated in Soteria Berne. The overall clinical experience is that most acute schizophrenia

patients can indeed be efficiently treated by the described approach. Even very tense and aggressive psychotics often calm down within days in the relaxing Soteria atmosphere. Incidents of serious violence against self or others have been extremely rare (less than 10 cases in 20 years). However, about 10-15% of randomly assigned schizophrenia patients, with whom no working alliance could be established, could not be adequately treated in the open Soteria setting (51). They were referred to one of the local psychiatric hospitals with which Soteria Berne is closely collaborating. Although preferentially focused on young adults in an early stage of illness, the Soteria treatment seems to be beneficial for most types of patients with schizophrenic or schizophreniform disorders, including chronic patients. So far, we have not been able to clearly identify illness factors that predict favorable or unfavorable treatment responses.

Comparative longitudinal research revealed at least similar, and partly probably better 2-year outcomes than with traditional methods, with much lower total doses of antipsychotics and comparable daily costs (see details below). Systematic evaluations over more than two years, which involve significant methodological difficulties, are still lacking. Casuistic observations with former patients with whom we remained in contact show, however, a number of cases with astonishingly favorable evolutions over decade-long periods. Possible long-term advantages seem to be mainly located in the area of social adaptation and stigmatization at both subjective and objective levels, and in a less traumatic subjective impact of the psychotic experience and the subsequent institutional measures. Feelings of personal value and identity, too, seem better preserved, allowing for a better eventual integration of the psychotic experience into the personal life history. Even clearly maturing effects related to the psychotic crisis and its psychodynamic elaboration in Soteria could sometimes be observed, especially when after-care was adequately prolonged, after discharge, by rehabilitative measures and a sufficiently long individual or family-centered psychotherapy.

In addition, the shared daily life in the therapeutic community offers unique opportunities for close participant observation of psychotic phenomena. Particularly striking is the observation that acute psychotic states often greatly change from day to day, and sometimes even from hour to hour (52). They apparently depend more closely than generally admitted on current environmental influences, especially on the emotional state of team members and other patients. Increasing emotional tension, irritation or ambiguity of communication almost invariably intensify psychotic disturbances, whereas genuine calm, clarity and respectful friendliness generally decrease them. Clearly structured organizational and relational limits also seem to be beneficial. Too much change, confusion, noise and stimulus overload (e.g. from television, computer, invasive music, newspapers, too complex or too heavy discussions, etc.) has, on the contrary, unfavorable effects. Boundaries between normality and psychosis often appear astonish-

ingly permeable in the Soteria setting. In the special atmosphere of the "soft room", in particular, emotional contact with healthy parts of the personality often remained possible even in severely psychotic states. According to retrospective self-reports, maintaining such a contact was often experienced as very helpful, in spite of apparently missing immediate effects.

## RESULTS OF EVALUATIVE RESEARCH

Mosher and co-workers were able to show in several controlled 2-year outcome studies that similar or better therapeutic effects regarding psychopathology, hospitalization rate, work and social functioning could be obtained in the Soteria setting, as compared with traditional hospital-based treatments (8,10,11,53).

The evaluative research of Soteria Berne was mainly done in two studies, the first one concerning immediate outcomes without a control group (51), and the second one comparing the outcomes of Soteria patients in a 2-year follow-up study with carefully matched controls coming from four different hospital settings in Switzerland and Germany (54).

In the first study (51), immediate results on the four axes of psychopathology, housing situation, work situation, and global outcome were very good or good in about 2/3 of the first 56 treated cases. The average age of the patients was 24 years (range 18 to 37). They stayed in Soteria Berne between 3 and 763 days, in average 54. Full remission of symptoms could be observed in 41% of the cases. 39% of the patients did not receive any antipsychotics during their stay in Soteria, and outcome at discharge was judged as quite good to good in 75% of these patients. Statistically, women and less medicated patients had a significantly better outcome than men and patients receiving higher doses of antipsychotics. This latter and at first hand surprising finding should not be overinterpreted, however, as indicating a superiority of a drug-free treatment, because only the most severely disturbed and milieu-therapy-resistant patients received higher doses of antipsychotics, according to the above mentioned treatment rules. The main result of this study is, therefore, the confirmation that acute psychotic patients with schizophrenic spectrum disorders (schizophrenia in 39 out of 56 cases according to DSM-III criteria, 14 schizophreniform psychoses, 3 unclear) can in fact be successfully treated in a Soteria setting, as claimed by Mosher et al (8,9).

In the second study, Ciompi et al (54) compared 22 index patients fulfilling all requested research criteria, among the up to date 60 first time admitted schizophrenia patients in Soteria Berne, with the same number of matched controls selected out of 70 first admitted patients from four traditional hospitals in Switzerland and Germany. By using the German version of the Ward Atmosphere Scale, it was verified that the therapeutic atmosphere in Soteria Berne differed significantly from the atmosphere in the four traditional

control institutions. Main differences concern greater emotional closeness and more warmth and spontaneity of patient-staff relations in Soteria, and less hierarchy, order and control. The 2-year outcome revealed no significant differences between Soteria patients and controls concerning the four above-mentioned outcome measures and the relapse rate. 27% of the patients in Soteria Berne never got antipsychotics, as compared with 5% of the controls. The total 2-year doses of antipsychotics in Soteria Berne were 56% lower than in the control group. Average daily costs were exactly the same in Soteria and in the four control settings. However, the length of stay in Soteria was 185 days in average, exactly twice the duration of hospital treatment of the controls, a difference that led to about one third higher 2-year costs for Soteria patients.

Further examination of this finding revealed that the longer lengths of stay were mainly related to the fact that we initially tried to include full social and vocational rehabilitation into the Soteria treatment, in order to preserve long-term personal and conceptual continuity. For financial reasons, this idealistic approach could, however, not be maintained. Eventually, we therefore adopted the more conventional practice of transferring social and vocational rehabilitation to specialized local community-based settings. As a result, the average length of stay at Soteria Berne is currently 44 days (vs. 49 days at the admission ward for schizophrenia patients of the nearby psychiatric university hospital). Treatment costs at Soteria were thus reduced by 32% in the last four years, and are now consistently 10-20% lower than in comparable local units also focused on patients suffering from first and second episode schizophrenic psychosis.

In summary, our findings revealed at least similar, and partly possibly better 2-year outcomes in Soteria Berne than in standard inpatient settings, with significantly lower total doses of antipsychotics. These results replicate the initial findings of Mosher and Menn (8) and Matthews et al (53) and confirm the efficacy of the Soteria approach. They are in line with the reviews by Gunderson (55) and Ellsworth (56), who concluded that milieu-therapy leads to a significant improvement of symptomatology and social functioning in acute as well as chronic schizophrenia patients, and also with the results of an early study by Carpenter et al (57), who used a less radical milieu-therapeutic approach. More recently, Cullberg et al (58) yielded that it is possible to successfully treat first episode psychosis patients with fewer inpatient days and less antipsychotic medication than traditionally used, when combined with intensive psychosocial treatment and support.

## DISCUSSION, CONCLUSIONS AND FURTHER IMPLICATIONS

The observations at Soteria Berne confirm Mosher's claim that, in this specific environment, most acute schizophrenia patients can be as successfully treated as by standard hospital proceedings, but with significantly lower

doses of antipsychotics and without higher daily costs. In addition, the Soteria approach seems to offer certain advantages mainly located at the subjective-emotional, familial and social level. How can these findings be explained and usefully integrated into the mainstream psychiatric concepts and practices?

One possible objection concerns the validity of the reported empirical findings. Given the extreme rarity of Soteria-like projects and the consequent quantitative and also qualitative weaknesses of the so far available research data, it must certainly be admitted that the existing empirical evidence is not yet sufficient for drawing any definitive conclusions (for an extensive discussion of the involved questions of methodology and interpretation, see 13). It is also true that 10-15% of randomly assigned acute schizophrenics could not be adequately treated in the open Soteria setting. In spite of that, in our view, both the clinical experience over more than 30 years from several American, Swiss and German Soteria-like settings and the available converging research data indicate that new therapeutic possibilities for a great majority of schizophrenics do in fact exist along the explored unconventional lines.

In our opinion, these observations are not in contradiction with the current understanding of psychotic phenomena and therapeutic practice, at a closer analysis. In accordance with the integrative viewpoint of affect-logic, assuming strong regulating and integrating influences of prevailing affective states on cognition and behavior, the major impact of the Soteria approach is situated at the emotional level, with multiple beneficial "secondary effects" on global mental and social functioning. That the schizophrenic psychosis is the result of complex ongoing interactions between unfavorable biological, psychological, social and environmental influences is generally agreed upon and strongly supported also by modern notions on the effects of stress and neural plasticity in both normal and emotionally vulnerable persons. In addition, a large number of studies speak for beneficial complementarities between pharmacotherapeutic, psychotherapeutic and sociotherapeutic approaches. The crucial significance of the level of emotional tension in and around a patient at risk for psychosis is largely confirmed by the convergent results of more than 20 studies on the effects of so-called "expressed emotions". It is, hence, not at all surprising that a therapeutic approach systematically focused on a sustained reduction of emotional tension can have beneficial effects, given that this approach partly substitutes in a more physiological way the well known effects that antipsychotic drugs also exert on the emotional system.

Whether antipsychotics can, or even should be dramatically reduced in a Soteria-like environment is still, as we believe, an open question necessitating much more research, focused both on short-term and long-term advantages and disadvantages of antipsychotics. While it is certainly true that the current "atypical" antipsychotics have less short-term side effects than the classical drugs, it

should not be forgotten, however, that we still have very little knowledge about their possible long-term side effects over decades. At this point, it should also be emphasized that practically all available studies on the effects of antipsychotics on schizophrenia neglect the crucial variable "emotional atmosphere of the therapeutic setting", and must therefore be considered as severely biased. One remarkable exception is an early study on expressed emotions showing that similar effects on relapse rates can be obtained with significantly less drugs in situations of low as compared to high emotional tension (59). More in line with Carpenter and Buchanan's (60) rejection of an "ideological" drugs versus psychosocial therapy polemic than with Mosher's ongoing radical anti-drug stand (10,11), we have gradually opted, in this situation, for a moderate use of modern atypical antipsychotics that differs no longer dramatically from current low-dosage practices.

A related much discussed question is the cost of a Soteria setting. Since costs are nowadays a crucial factor for the survival of a non-conventional setting like Soteria, the problem is to find a viable compromise between optimal treatment conditions with long-lasting favorable affective-cognitive influences and as little use of antipsychotics as possible, and the existing financial constraints. At first view, continually "being with" an acute psychotic patient – a cornerstone of the Soteria approach – may seem very expensive. On the other hand, the costs for personal resources at Soteria are lowered by the fact that all domestic tasks (shopping, cooking, cleaning, gardening, house-keeping, etc.) are used as therapeutic tools and done by the members of the therapeutic community themselves. Daily costs at Soteria Berne were therefore never higher than in conventional psychiatric admission wards of the same area. They even tend consistently to be lower for achieving similar results.

In summary, we think that the pioneering Soteria approach has revealed a number of possible improvements in the treatment of acute schizophrenia patients, especially in its flexible form gradually adopted in Soteria Berne. The question whether this approach should be reserved for schizophrenia patients alone, or also extended to other groups of patients, has not yet been sufficiently explored. On the one hand, treatment units specifically focused on the needs of certain diagnostic groups have generally been proved useful and are therefore more and more frequently introduced (e.g. for depressive, drug-dependent, alcohol-dependent, borderline or geronto-psychiatric patients). There are at least as good reasons for creating units that meet the particular needs of acute schizophrenic patients. On the other hand, so-called "Soteria-elements" (e.g., increased personal and conceptual continuity, more personalized approach to mental patients, more convivial ward organization, etc.) have also been successfully introduced in conventional psychiatric admission wards, sometimes with astonishingly beneficial effects on the general ward atmosphere, and especially on the rate of violence

and necessary violent counter-measures (14,61). Modern techniques of early prevention of schizophrenia, too, are partly inspired by “Soteria elements” (62). All these observations show that the Soteria idea may have much more than only schizophrenia-specific potentials.

As a conclusion, we think that the Soteria experience supports the assumption that emotional factors play a much greater role than generally admitted in both normal and pathological modes of thinking and behaving, including schizophrenic disorders. According to a somewhat provocative statement formulated in summarizing a recent review of Soteria-like experiences (13), “Soteria acts like a neuroleptic drug, but without its unfavorable side-effects”. Antipsychotic drugs may, in fact, not directly influence cognitive functions, but act primarily by their impact on the affect-regulating limbic and paralimbic structures which, secondarily, improve cognitive functions and behavior. Similar but probably more sustained (because more specifically problem-centered, context-related and personality-adapted) effects of basic emotional states on thinking and behaving can be obtained in a natural way, as showed by the Soteria experience. An additional theoretical implication based on the concept of affect-logic is the hypothesis that schizophrenia, too, and not only mania or depression, may essentially be an “affective psychosis” of, however, a quite particular kind (63).

## References

- Zubin J, Spring B. Vulnerability - a new view on schizophrenia. *J Abnorm Psychol* 1977;6:103-26.
- Nuechterlein KH, Dawson ME. A heuristic vulnerability/stress model of schizophrenic episodes. *Schizophr Bull* 1984;10:300-12.
- Ciampi L. Wie können wir die Schizophrenen besser behandeln? Ein neues Krankheits- und Therapiekonzept. *Nervenarzt* 1981;52:506-15.
- Anderson CM, Hogarty GE, Reiss DJ. Family treatment of adult schizophrenic patients: a psycho-educational approach. *Schizophr Bull* 1980;6:490-505.
- Hogarty GE, Greenwald D, Ulrich RF et al. Three-year trials of personal therapy among schizophrenic patients living with or independent of family. II. Effects on adjustment of patients. *Am J Psychiatry* 1997;154:1514-24.
- Alanen YO, Lehtinen K, Rakkolainen V et al. Need-adapted treatment of new schizophrenic patients: experiences and results of the Turku Project. *Acta Psychiatr Scand* 1991;83:363-72.
- Mosher LR, Menn AJ, Matthews S. Evaluation of a home-based treatment for schizophrenics. *Am J Orthopsychiatry* 1975;45:455-67.
- Mosher LR, Menn AJ. Community residential treatment for schizophrenia: two-year follow-up data. *Hosp Commun Psychiatry* 1978;29:715-23.
- Mosher LR, Vallone R, Menn A. The treatment of acute psychosis without neuroleptics: six-week psychopathology outcome data from the Soteria project. *Int J Soc Psychiatry* 1995;41:157-73.
- Bola JR, Mosher LR. At issue: predicting drug-free treatment response in acute psychosis from the Soteria project. *Schizophr Bull* 2002;28:559-75.
- Bola JR, Mosher LR. Treatment of acute psychosis without neuroleptics: two-year outcomes from the Soteria project. *J Nerv Ment Dis* 2003;191:219-29.
- Ciampi L, Dauwalder HP, Maier C et al. The pilot project “Soteria Berne”. Clinical experiences and results. *Br J Psychiatry* 1992;161:145-53.
- Ciampi L, Hoffmann H, Broccard M (eds). *Wie wirkt Soteria? Eine atypische Schizophreniebehandlung – kritisch durchleuchtet*. Bern: Huber, 2001.
- Kroll B, Machleidt W, Debus S et al. Auswirkungen der Soteria-Idee in Deutschland und Österreich. In: Ciampi L, Hoffmann H, Broccard M (eds). *Wie wirkt Soteria? Eine atypische Schizophreniebehandlung – kritisch durchleuchtet*. Bern: Huber, 2001:181-205.
- Bleuler M. *The schizophrenic disorders. Long term patient and family studies*. New Haven: Yale University Press, 1978.
- Ciampi L, Müller C. *Lebensweg und Alter der Schizophrenen. Eine katamnestic Langzeitstudie bis ins Alter*. Berlin: Springer, 1976.
- Huber G, Gross G, Schüttler R. *Schizophrenie. Eine verlaufs- und sozialpsychiatrische Langzeitstudie*. Berlin: Springer, 1979.
- Huber G, Gross G, Schüttler R et al. Longitudinal studies of schizophrenic patients. *Schizophr Bull* 1980;6:592-605.
- Ciampi L. Catamnestic long-term studies on the course of life of schizophrenics. *Schizophr Bull* 1980;6:606-18.
- Ciampi L. Learning from outcome studies. Toward a comprehensive biological-psychological understanding of schizophrenia. *Schizophr Res* 1988;1:373-84.
- Harding CM, Brooks GW, Ashikaga T et al. The Vermont longitudinal study of persons with severe mental illness. I. Methodology, study sample, and overall status 32 years later. *Am J Psychiatry* 1987;144:716-26.
- Harding CM, Brooks GW, Ashikaga T et al. The Vermont longitudinal study of persons with severe mental illness. II. Long-term outcome of subjects who retrospectively met DSM-III criteria for schizophrenia. *Am J Psychiatry* 1987;144:727-37.
- Ogawa K, Miya M, Watarai A et al. A long-term follow-up study of schizophrenia in Japan - with special reference to the course of social adjustment. *Br J Psychiatry* 1987;151:758-65.
- McGlashan TH. A selective review of recent North American long-term followup studies of schizophrenia. *Schizophr Bull* 1988;14:515-42.
- Hogarty GE, Goldberg SC. Drugs and sociotherapy in the after-care of schizophrenic patients: one-year relapse rates. *Arch Gen Psychiatry* 1973;28:54-64.
- Hogarty GE, Goldberg SC, Schooler NR et al. Drugs and sociotherapy in the after-care of schizophrenic patients II: Two-year relapse rates. *Arch Gen Psychiatry* 1974;1:603-8.
- Ciampi L, Dauwalder HP, Agué C. Ein Forschungsprogramm zur Rehabilitation psychisch Kranker. II. Querschnittsuntersuchung einer Population von chronischen Spitalpatienten. *Nervenarzt* 1978;9:332-8.
- Ciampi L, Dauwalder HP, Agué C. Ein Forschungsprogramm zur Rehabilitation psychisch Kranker. III. Längsschnittuntersuchungen zum Rehabilitationserfolg und zur Prognostik. *Nervenarzt* 1979;50:366-78.
- Carter JW, Schulsinger F, Parnas J et al. A multivariate prediction model of schizophrenia. *Schizophr Bull* 2002;28:649-82.
- Wing JK, Brown GW. *Institutionalism and schizophrenia. A comparative study of three mental hospitals 1960-1968*. Cambridge: University Press, 1970.
- Mednick SA, Schulsinger F, Schulsinger H. Schizophrenia in children of schizophrenic mothers. In: Davis W (ed). *Childhood personality and psychopathology. Current topics*. New York: Wiley, 1975:169-97.
- Mednick SA, Schulsinger F, Teasdale TW et al. Schizophrenia in high-risk children. Sex differences in predisposing factors. In: Serban G (ed). *Cognitive defects in the development of mental illness*. New York: Brunner & Mazel, 1978:169-97.
- Parnas J, Teasdale TE, Schulsinger H. Institutional rearing and diagnostic outcome in children of schizophrenic mothers: a

- prospective high risk study. *Arch Gen Psychiatry* 1985;42:762-9.
34. Tienari P, Sorri A, Lathi I et al. Interaction of genetic and psychosocial factors in schizophrenia. *Acta Psychiatr Scand* 1985; 71:19-30.
  35. World Health Organization. Schizophrenia. An international follow-up study. Chichester: Wiley, 1979.
  36. Sartorius N, Jablensky A, Ernberg G et al. Course of schizophrenia in different countries: some results of a WHO international comparative 5-year follow-up study. In: Häfner H, Gattaz W, Janzarik W (eds). Search for the causes of schizophrenia. Berlin: Springer, 1987:107-13.
  37. Leff J, Kuipers L, Berkowitz R et al. A controlled trial of social intervention in the families of schizophrenic patients. *Br J Psychiatry* 1982;141:121-34.
  38. Leff J, Vaughn C. Expressed emotions in families. Its significance for mental illness. New York: Guilford, 1985.
  39. Kavanagh DJ. Recent developments in expressed emotion and schizophrenia. *Br J Psychiatry* 1992;160:601-20.
  40. Ciompi L. Affektlogik. Über die Struktur der Psyche und ihre Entwicklung. Ein Beitrag zur Schizophrenieforschung. Stuttgart: Klett-Cotta, 1982 (English version: The psyche and schizophrenia. The bond between affect and logic. Cambridge: Harvard University Press, 1988).
  41. Ciompi L. Affect logic: an integrative model of the psyche and its relations to schizophrenia. *Br J Psychiatry* 1994;64:51-5.
  42. Ciompi L. The concept of affect logic. An integrative psychosocio-biological approach to understanding and treatment of schizophrenia. *Psychiatry* 1997;60:158-70.
  43. Hoffmann H, Ciompi L. Schizophrene Langzeitverläufe aus affektlogischer Perspektive. *Psycho* 1996;22:703-12.
  44. Ciompi L. Non-linear dynamics of complex systems. The chaostheoretical approach to schizophrenia. In: Brenner H-D, Böker W, Genner R (eds). Toward a comprehensive therapy of schizophrenia. Seattle: Hogrefe & Huber, 1997:18-31.
  45. Tschacher W, Scheier C, Aebi E. Non-linearity and chaos in the course of psychoses - an empirical classification of dynamics. In: Brenner HD, Böker W, Genner R (eds). Towards a comprehensive therapy for schizophrenia. Seattle: Hogrefe & Huber, 1997:32-48.
  46. Hoffmann H. Interfaces in community psychiatry. *Int J Ment Health* 1988;26:27-42.
  47. Simon FB. Soteria – Eine Ersatzfamilie? In: Ciompi L, Hoffmann H, Broccard M (eds). Wie wirkt Soteria? Eine atypische Schizophreniebehandlung – kritisch durchleuchtet. Bern: Huber, 2001: 135-58.
  48. Herz MI, Stymanski HV, Simon JC. Intermittent medication for stable schizophrenic outpatients: an alternative to maintenance medication. *Am J Psychiatry* 1982;39:918-22.
  49. Carpenter WT, Heinrichs DW. Early intervention time limited, targeted pharmacotherapy in schizophrenia. *Schizophr Bull* 1983;9:533-42.
  50. Herz MI. Prodromalsymptome, intermittierende Medikation und Rezidivprophylaxe bei Schizophrenie. In: Böker W, Brenner HD (eds). Integrative Therapie der Schizophrenie. Bern: Huber 1996;264-77.
  51. Ciompi L, Dauwalder HP, Maier C et al. Das Pilotprojekt "Soteria Bern" zur Behandlung akut Schizophrener. I. Konzeptuelle Grundlagen, praktische Realisierung, klinische Erfahrungen. *Nervenarzt* 1991;2:428-35.
  52. Aebi E, Ackermann K, Revenstorf D. Ein Konzept der sozialen Unterstützung für akut Schizophrene - Zeitreihenanalysen täglicher Fluktuationen psychotischer Merkmale. *Z Klin Psych Psychopath Psychother* 1993;41:18-30.
  53. Matthews SM, Roper MT, Mosher LR et al. A non-neuroleptic treatment of schizophrenia: analysis of the two-year postdischarge risk of relapse. *Schizophr Bull* 1979;5:322-33.
  54. Ciompi L, Kupper Z, Aebi E et al. Das Pilotprojekt "Soteria Bern" zur Behandlung akut Schizophrener. II. Ergebnisse der vergleichenden prospektiven Verlaufstudie über zwei Jahre. *Nervenarzt* 1993;64:440-50.
  55. Gunderson JG. A reevaluation of milieu therapy for nonchronic schizophrenic patients. *Schizophr Bull* 1980;6:64-9.
  56. Ellsworth RB. Characteristics of effective treatment milieus. In: Gunderson JG, Will OA, Mosher LR (eds). The principle and practices of milieu therapy. New York: Aronson, 1983:87-123.
  57. Carpenter WT, McGlashan TH, Strauss JS. The treatment of acute schizophrenia without drugs: an investigation of some current assumptions. *Am J Psychiatry* 1977;134:14-20.
  58. Cullberg J, Levander S, Holmquist R et al. One-year outcome in first episode psychosis patients in the Swedish Parachute project. *Acta Psychiatr Scand* 2002;106:276-85.
  59. Vaughn C, Leff J. The influence of family and social factors on the course of psychiatric illness. A comparison of schizophrenic and depressed neurotic patients. *Br J Psychiatry* 1976;129:125-37.
  60. Carpenter WT, Buchanan RW. Commentary on the Soteria project: misguided therapeutics. *Schizophr Bull* 2002;28:577-81.
  61. Eickmann F, Jiko I. Soteriaelemente in der psychiatrischen Pflichtversorgung. Möglichkeiten der Gewaltvermeidung. In: Wollschläger M (ed). Sozialpsychiatrie. Entwicklungen, Kontroversen, Perspektiven. Tübingen: DGVT-Verlag, 2001:521-9.
  62. Klosterkötter J. Stellungnahmen von unabhängigen Experten. In: Ciompi L, Hoffmann H, Broccard M (eds). Wie wirkt Soteria? Eine atypische Schizophreniebehandlung – kritisch durchleuchtet. Bern: Huber, 2001:225-30.
  63. Ciompi L. Is schizophrenia an affective disease? The hypothesis of affect-logic and its implications for psychopathology. In: Flack WF, Laird JD (eds). Emotions in psychopathology: theory and research. New York: Oxford University Press, 1998:283-97.