

## Psychosocial treatment, antipsychotic postponement, and low-dose medication strategies in first-episode psychosis: A review of the literature

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Reconsidering medication-free research in early-episode schizophrenia prompts a review of acute psychosocial treatments using medication postponement protocols. We describe and compare the different psychosocial treatment approaches.

Studies were included in the review if initial psychosocial treatment combined with a time-limited postponement of antipsychotics was compared to initial antipsychotic treatment using a quasi-experimental or better research design and reported outcomes of at least one year.

Five studies were included ( $N=261$ ), each reporting modestly better long-term outcomes than initial medication treatment, resulting in a composite small-medium effect-size advantage ( $r = 0.17$ ). In addition, 27–43% of experimental patients were not receiving antipsychotics at the two- or three-year follow-up.

These projects demonstrate the feasibility of a carefully supervised approach to medication-free research and also suggest a strategy for integrating biological, psychological and social treatment components in early-episode psychoses. Initial psychosocial treatment combined with a time-limited postponement of antipsychotic medications for eligible, non-dangerous, early-episode patients may facilitate a reduction in long-term medication dependence and the discrimination of similar but pathophysiologically different diagnostic entities. Rigorous evaluation in a randomized controlled trial designed to identify medication and psychosocial treatment-responsive subgroups of patients may contribute to diagnostic specificity and improved patient outcomes.

**Keywords:** first-episode; schizophrenia; psychosis; prevention; psychosocial; low-dose medication

### Introduction

A recent meta-analytic review that failed to find evidence of long-term harm from short-term medication postponement in early-episode schizophrenia psychosis (Bola, 2006) has reopened the possibility of ethically conducting medication-free research in schizophrenia (Carpenter, Schooler, & Kane, 1997; McGlashan, 2006). This allows the investigation of a number of scientific questions, including: the comparison of new medications to placebo; minimum dosage requirements and dose–response predictors; whether the minimum dose of medication includes zero; developing the role of

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psychosocial acute treatment in the therapeutic armamentarium; identifying patients with spontaneous remission or less serious forms of psychotic disorder (e.g. schizophreniform disorder) and which distinct treatments they should receive; how to estimate effect sizes for the components of treatment (apart from the combined effect of many treatments); and what the predictors of patient responsiveness to different treatment components are. These questions embody numerous facets of the historically refractory problem of heterogeneity in schizophrenia. To the extent that medication-free research can contribute to knowledge that results in more homogeneous subgroupings of early-episode patients, substantial scientific and clinical benefits may accrue, including a more refined application of the medical model, improved patient outcomes, and reduced measurement error in the investigation of causal mechanisms underlying subtypes of psychotic disorders.

One of the more pressing questions in first-episode research involves the identification of individuals likely to experience spontaneous remission, and who are therefore not in need of long-term treatment with antipsychotic medications with increasing risk of serious side effects over time. The recognition that recovery occurs among some patients with schizophrenia-like symptoms arose 70 years ago in the seminal work of Langfeldt (1939). The importance of identifying this subgroup and developing medically appropriate treatments for them is accentuated by a convergence of several factors: recalcitrant heterogeneity in schizophrenia that impedes the development of scientific knowledge (Bleuler, 1987[1908]), side-effects of antipsychotic medications (Meyer, 2007), and patient preferences to avoid side-effects (Shumway, 2003) often through discontinuing medication use (Lieberman et al., 2005).

Although Langfeldt's term "schizophreniform disorder" has been incorporated into current nosology, there is neither a distinct treatment for this disorder, nor does the criterion used to distinguish it from schizophrenia (symptoms for less than 6 months) contribute to the identification of medication-free responders (Bola, Lehtinen, Aaltonen, Rökköläinen, Syvälahti, & Lehtinen, 2006; Bola & Mosher, 2002). On the contrary, most clinical practice guidelines around the world recommend treatment with antipsychotic medications for a minimum of one year in first episodes of psychosis (Gaebel, Weinmann, Sartorius, Rutz, & McIntyre, 2005). The few available empirical investigations of characteristics associated with spontaneous remission and/or responsiveness to initial psychosocial treatment appear, however, to cluster around the concept of good prognosis suggested by Langfeldt (1939) and others (Bola et al., 2006; Bola & Mosher, 2002; Carpenter & Stephens, 1982; Vaillant, 1962).

In relation to patient safety, Carpenter and colleagues have detailed criteria for designing medication-free research that maximizes scientific benefit while minimizing risk to patients (Carpenter et al., 1997). These criteria include: careful patient selection, insuring that patients are competent to give informed consent, presenting a clear statement of risks and benefits, enhancing clinical care, establishing early intervention and study withdrawal procedures, minimizing the duration of the medication-free period, and making alternate treatments available after the study concludes. As medication-free protocols will likely be assessed by institutional review boards as "greater than minimal risk", these guidelines can assist in maximizing scientific and clinical benefits while minimizing risks to patients.

In the present study, we review early-episode acute treatment studies with an active psychosocial treatment component that include a time-limited medication

postponement and are evaluated with quasi-experimental or better research designs and outcomes of at least one year. We assess the feasibility of this approach and compare and contrast elements of the various psychosocial treatments used in the studies. This approach developed from the suggestion of a possible benefit from active psychosocial treatment (compared to placebo) in a previous review (Bola, 2006) and includes description of the components of psychosocial treatment employed in the original studies.

## **Methods**

A search of the academic literature was conducted to identify published peer-reviewed papers meeting four criteria:

- (1) a majority of patients were diagnosed with first-episode schizophrenia spectrum disorders;
- (2) acute-phase psychosocial treatment incorporating a time-limited postponement of antipsychotic medications was compared to immediate antipsychotic medication treatment;
- (3) the study used a quasi-experimental or random assignment experimental research design; and
- (4) quantitative outcomes of at least one-year were reported.

Online databases (including Medline, Psycinfo, Social Work Abstracts) were searched and recent review articles perused to identify studies meeting these criteria.

## ***Included studies***

Five studies were identified as meeting all selection criteria (Bola & Mosher, 2003; Ciompi et al., 1992; Cullberg et al., 2006; Lehtinen, Aaltonen, Koffert, Rakkolainen, & Syvalahti, 2000; Rappaport, Hopkins, Hall, Belleza, & Silverman, 1978). Two additional studies met most, but not all, inclusion criteria (Carpenter et al., 1977; Schooler, Goldberg, Boothe, & Cole, 1967). The Carpenter et al. (1977) study is not strictly a quasi-experimental design since it compared National Institute of Health (NIH)-treated patients to one cohort of the World Health Organization's International Pilot Study of Schizophrenia (IPSS) (Leff, Sartorius, Jablensky, & Korton, 1992). In addition, more than half of the NIH patients (compared to none of the IPSS patients) had prior treatment for psychosis. The NIMH multi-site collaborative study (Cole, Klerman, Goldberg, & Group, 1964) is also excluded due to an absence of quantitative one-year outcome data (Schooler et al., 1967). It is worth noting, however, that both of these studies report somewhat better outcomes for the group receiving initial psychosocial treatment.

## ***Included studies: Synopsis of design, medication use and outcomes***

Rappaport's Agnews State Hospital project conducted a randomized controlled trial (RCT) of first-episode DSM-II schizophrenia patients in a therapeutically enhanced ward with a time-limited postponement (max. 45 days) of antipsychotics (Rappaport et al., 1978) compared to usual treatment. At the three-year follow-up, 61% of

completers (24/41) and 32% (24/47) of 'intent-to-treat' subjects (who dropped out before study completion) had not received antipsychotics. Outcomes among completers favored the group not initially medicated (effect size ( $r$ ) = 0.18; Bola, 2006). Effect size " $r$ " is interpreted using a binomial effect size display as a percent advantage (here, +18%); small, medium and large effect sizes are 0.10, 0.30 and 0.50, respectively (Rosenthal & DiMatteo, 2001).

The Soteria project conducted a two-cohort study (with a quasi-experimental design in the first cohort, and random non-blind in the second) of residential therapeutic milieu treatment and time-limited antipsychotic postponement (max. 6 weeks) compared to hospital treatment with antipsychotics for first- and second-episode DSM-II schizophrenia patients (Bola & Mosher, 2003). At the two-year follow-up, 43% of completers (29/68) and 35% of intent-to-treat subjects (29/82) had not received antipsychotics since the end of the 6-week medication-control period. Only 19% (13/68) of completing patients were continuously maintained on antipsychotics over the two-year study period. Outcomes for completers, adjusted for greater attrition in the usual treatment group, favored the Soteria San Francisco subjects (effect size ( $r$ ) = 0.19; Bola, 2006).

In Switzerland, Ciompi adapted Mosher's Soteria San Francisco approach in a project that is still functioning after nearly 25 years. In a case-control study, first-episode DSM-III-R schizophrenia spectrum subjects treated in the community-based therapeutic milieu with minimal use of antipsychotics for 3–4 weeks were compared to subjects receiving usual treatment in local hospitals; 27% (6/22) of the Soteria subjects did not receive antipsychotics over the entire two-year follow-up (Ciompi et al., 1992). Average daily chlorpromazine equivalent dosages in Soteria Berne were 45% lower than for patients treated in the hospital (153 mg vs. 274 mg in the hospital, or, in haloperidol equivalents, 3 mg vs. 5.5 mg). Outcomes on psychopathology, housing situation, work situation and relapse rates favored the Soteria-Berne program with a small effect size compared to the hospital (effect size ( $r$ ) = 0.09; Bola, 2006). Treatment costs in Soteria Berne were initially higher than in the hospital because they also included rehabilitation, but were about 10–20% lower when this factor was excluded (Ciompi & Hoffman, 2004).

In Finland, the API project (Acute Psychosis Integrated treatment project) conducted a quasi-experimental study (different treatments in different locales) of interdisciplinary crisis family intervention and a postponement of antipsychotic medications (max. 3 weeks) compared to initial medication treatment *plus* the same psychosocial interventions following the Finnish Need-Adapted treatment (Lehtinen et al., 2000). At the two-year follow-up, 43% (29/67) of completers and 35% (29/83) of intent-to-treat subjects had never been treated with antipsychotics. Outcomes favored the initially unmedicated group (effect size ( $r$ ) = 0.16; Bola, 2006). Medication doses were relatively low in both treatment groups: maximum daily haloperidol equivalents exceeded 9 mg for 3% of experimental patients and 13% of the comparison group (Lehtinen et al., 2000).

In Sweden, Cullberg's Parachute Project conducted a multi-center quasi-experimental study of "need-adapted treatments" including initial outpatient mobile response teams combined with residential therapeutic milieu ( $N=175$ ) compared to specialized university hospital treatment for first-episode DSM-IV psychosis patients ( $N=64$ ). In both treatments there was an initial postponement of antipsychotics for 1 week. A second, historical (from a previous period in time), comparison group had a mixed standard treatment ( $N=71$ ). At the end of year one, there were significantly



better results in the Parachute group on negative symptom scales compared to the contemporaneous comparison group (Cullberg, Levander, Holmquist, Mattsson, & Weiselgren, 2002; Cullberg et al., 2006). Global Assessment of Functioning (GAF) levels were also significantly higher in the Parachute group compared to the historical group. The recommendation of non-neuroleptic treatment during the first week was followed for about two-thirds of the Parachute patients. At the three-year follow-up of Parachute patients with an initial schizophrenia spectrum diagnosis, 42% (25/59) of treatment completers and 35% (25/71) of intent-to-treat subjects were not currently receiving antipsychotic medications (some patients previously had brief, targeted, low-dose antipsychotics). There were 2 suicides (2/153) among Parachute patients in 5 years. The five-year GAF levels were significantly higher than the historical comparison group. Table 1 summarizes design and outcome information from these studies.

As can be seen from Table 1, available effect size estimates for 4 of 5 included studies all indicate a small-to-medium size long-term advantage for the psychosocially treated group (range of effect-size " $r$ ": 0.09–0.19). This results in a composite effect size (weighted by sample size) of  $r = 0.17$ , suggesting a modest 17% long-term advantage for the psychosocially treated group. In addition, 27–43% of experimental patients were not receiving antipsychotics at the two- or three-year follow-up. While the total number of patients included in these five studies is relatively small ( $N=261$ ), the convergence of results suggests the feasibility and potential importance of this approach. Evaluation of this approach that uses a larger sample, an RCT design, and incorporates design elements to support the identification of subgroups responsive to medication treatment, psychosocial treatment, or their combination is needed.

### ***Description of the psychosocial treatment models***

Of these five treatment programs, original investigators or others directly involved in four of the projects were available to offer feedback on our description of their treatment model. Described in chronological order, they are: Soteria San Francisco (Bola & Mosher, 2003), Soteria Berne (Ciompi et al., 1992), the Finnish Need-Adapted approach (Lehtinen, et al., 2000), and the Swedish Parachute project (Cullberg et al., 2006). Investigators were not available for the Agnew's State treatment program (Rappaport et al., 1978).

#### ***Soteria San Francisco***

Soteria San Francisco was developed by Mosher in the United States from the early 1970s to the mid-1980s (Bola & Mosher, 2003). Mosher investigated how "a community based, supportive, protective, normalizing, relationship focused environment might facilitate reintegration of psychologically disintegrated persons without artificial institutional disruptions of the process" (Mosher & Bola, 2004, p. 8). This innovative, relationship-oriented approach drew on moral treatment in psychiatry, Sullivan's interpersonal theory, and community treatment. Out of concern that many theoretical approaches to mental illness tried to fit the person into the theory, rather than adapt treatment to the person, Mosher described his orientation as "atheoretical" (Mosher & Bola, 2004, p. 8). He also developed a cautious approach to antipsychotic use from clinical experience and sensitivity to patient discomfort with side-effects.

Table 1. Medication-free early-episode schizophrenia spectrum clients<sup>a</sup>.

Study	Design	Duration (years)	Percent medication-free (completers; <i>n/N</i> )	Percent medication-free (intent-to-treat; <i>n/N</i> )	Effect size <i>r</i> <sup>b</sup>
Agnews State (Rappaport et al., 1978)	RCT	3	61% (24/41)	32% (24/74)	0.18
Soteria San Francisco (Bola & Mosher, 2003)	Quasi-experimental first Cohort, random in second Cohort	2	43% (29/68)	35% (29/82)	0.19
Soteria Berne (Ciompi et al., 1992)	Case-control (matched pairs for 5 variables)	2	27% (6/22)	27% (6/22)	0.09
Finnish Need-Adapted (Lehtinen et al., 2000)	Quasi-experimental	2	43% (29/67)	35% (29/83)	0.16
Swedish Parachute Project (Cullberg et al., 2006)	Quasi-experimental	3	42% (25/59) <sup>c</sup>	35% (25/71) <sup>c</sup>	n/a

<sup>a</sup>Adapted from (Bola, 2006)<sup>b</sup>(Bola, 2006)<sup>c</sup>Not medicated at follow-up; some previously medicated.

After entering the program, most patients did not immediately receive antipsychotics. An effort was made to engage patients in a relationship with a designated staff person and to provide a safe and low-stress environment. If, under these conditions, patients' psychotic symptoms did not worsen or began to improve, they were continued without antipsychotic medications for up to 6 weeks. At the 6-week follow-up, 76% (62/82) of Soteria San Francisco patients had not received antipsychotic medications compared to 2% (2/90) of hospital patients. Yet, there were similar reductions in psychopathology across the treatment groups (Mosher, Vallone & Menn 1995).

Treatment ingredients include: a small home-like environment, positive expectations of recovery and validation of the subjective experience of psychosis, "being with" and using everyday language to reframe the psychotic experience, preservation of personal power, shared chores and activities, minimal role definition and hierarchy, adequate time in residence to develop relationships, integration into the local community, and development of peer social and problem-solving networks (Mosher & Bola, 2004).

#### *Soteria Berne*

Ciampi integrated several additional aspects of then emerging knowledge in adapting Mosher's Soteria treatment to Switzerland in 1984. Higher than previously anticipated long-term recovery rates in schizophrenia (Bleuler, 1978; Ciampi, 1980, 1988a), a counter-productive effect of institutional treatment (Wing & Brown, 1970), knowledge that family psycho-education and social skills training can reduce relapse (Hogarty & Goldberg, 1973), "high expressed emotion" functioning as a stressor in vulnerable persons (Kavanagh, 1992), and family-related factors serving as stressors or protective factors (Tienari et al., 1985) were incorporated into an enhanced stress-vulnerability model including both biological and biographic factors (Ciampi, 1988b). The theoretical basis of Soteria Berne was Ciampi's concept of "Affektlogik" (translated as "affect-logic"), a synthesis of current ideas on psycho-social-biological interactions centered in the thesis that emotions are continuously interacting with all cognitive functioning and have essential organizing and integrating effects on cognition and behavior (Ciampi, 1997a). Ciampi also pioneered the application of dynamic systems theory to the understanding of non-linear psychosocial processes, such as the radical, discontinuous, change-of-state provoked by emotional tensions increasing beyond a critical point at the onset of psychosis (Ciampi, 1997b).

The therapeutic implications of the resulting understanding of schizophrenia include the following eight principles: (1) small, relaxing, stimulus-protecting and as "normal" as possible therapeutic setting, (2) continual personal support ("being with") of the acutely psychotic patient, (3) conceptual and relational continuity during the whole treatment, (4) continual close collaboration with family members and other important persons of reference, (5) clear and concordant information on the illness, the treatment and its prognostic risks and chances for patients, family and staff, (6) elaboration of common realistic goals with cautiously positive prospects concerning future housing and work, (7) consensual low-dose antipsychotic medication strategies, and (8) systematic after-care and relapse prevention for at least two years (Ciampi & Hoffman, 2004). Taken together, these eight therapeutic principles were intended to induce a state of long-lasting emotional relaxation.

### *Finnish Need-Adapted Treatment*

The development of the Finnish Need-Adapted approach can best be understood as an evolving process with relatively distinct developmental stages. For the first decades from 1968 to the mid 1990s, the focus was on developing milieu therapy and psychodynamically oriented long-term individual therapies. After intensive family therapy training in the beginning of 1981, influenced by ideas from systemic family therapy (Selvini-Palazzoli, Boscolo, Cecchin, & Prata, 1980), all patients and their families were met at the beginning of treatment. This had a major impact on practices and how psychosis was understood: acute psychosis changed from a mystery, which had needed years of work to unfold, to a crisis with clear links to the present and past difficulties in the patient's and his family's life. The patient and his family were recognized to have difficult but real life problems and needs that could be worked with. The new practices were described in a group of clinical principles and treatment guidelines formulated in the mid 1990s (Alanen, 1997).

Clinical principles included: providing flexible therapeutic activities individually tailored to the patient's needs, therapeutic activities should be complimentary allowing the therapeutic process as a whole to evolve, maintaining curiosity and a psychotherapeutic attitude, and maintaining follow-up contact and cultivating a feedback loop among staff, the patient and other persons in their support network (Lehtinen, 1993). Treatment principles included: the patient should be present in all situations that concern him (including treatment planning), regular meetings include the staff, patient and family (or other support persons), a whole systems orientation is maintained, and continuity of treatment is provided (Alanen et al., 1990).

### *Swedish Parachute Project*

The "Parachute Project" (metaphor for a safe landing) endeavored to incorporate new research knowledge into an evolution of the bio-psychosocial stress-vulnerability model and to use this knowledge in designing a specialized acute treatment for first-episode psychosis patients. Efforts were made to minimize elements considered to contribute to poor outcomes, including lack of continuity of care, reliance on high doses of antipsychotic medication, mixing of first-episode and multi-episode patients in treatment facilities and use of in-patient care with high expressed emotion in the treatment environment. The project thus represents an effort to provide "need-adapted treatment" on a large scale for all first-episode patients.

The following six principles describe the project's clinical foundation in the vulnerability-stress theory: (1) intervention without delay by the Parachute team, preferably in the patient's home; (2) initial crisis intervention is structured according to the patient's needs; (3) immediate and recurrent family meetings, generally including the patient, intended to understand the strains and resources of the family and to provide a common understanding of the psychotic reaction in light of the vulnerability-stress view; (4) accessibility and follow-up continuity provided by a specialized treatment team over a five-year period; (5) use of the lowest optimal dose of neuroleptic medication with an attempt to avoid antipsychotic medication during the first 1–2 weeks (benzodiazepines for anxiety or insomnia were used when needed); and (6) access to small-scale, home-like, low-stimulus overnight care when the stay in the patient's home proved insufficient or negative during this period. The crisis home was preferably situated outside the hospital, in an apartment or a small house, and

used only for 3–6 first-episode psychosis patients. Ordinary psychiatric inpatient care was only used in case of emergency. When psychotic symptoms did not abate or were perceived as painful by the patient, an initial daily dose of 1–2 mg haloperidol equivalents was recommended (Cullberg et al., 2002, 2006).

### **Comparison of psychosocial treatments**

These innovative programs offer a striking contrast to current medical practices in the United States and many developed countries. Rather than hospitalizing and immediately treating acute first-episode patients with antipsychotic medications, these pilot projects have demonstrated the feasibility of combining specially designed psychosocial treatment with a time-limited trial postponement of antipsychotic medications, usually followed by low-dose antipsychotic treatment when needed. Evaluation with quasi-experimental and random assignment research designs have found modestly better average long-term outcomes compared to usual treatment. In each study, about one-third of first-episode patients were successfully treated with psychosocial interventions alone, and in several studies an additional proportion was treated with very low doses of antipsychotic medications. Comparable outcomes and lowered medication use combined with the finding that patients responding to psychosocial treatment alone have better than average outcomes (Bola et al., 2006; Bola & Mosher, 2002) suggests the importance of additional research to evaluate this type of intervention.

In comparing the psychosocial treatment approaches, there may be no overt theoretical commonalities among all of these treatment programs. Mosher described his Soteria San Francisco program as “atheoretical” (Mosher & Bola, 2004, p. 8). Ciompi’s Soteria Berne is based on the integrative psycho-socio-biological concept of affect-logic and Cullberg’s Swedish Parachute project, too, incorporated emerging knowledge into an evolving stress-diathesis model of schizophrenia. The Finnish Need-Adapted approach grew out of psychodynamic and systemic family therapy. Ciompi’s hypothesis of an antipsychotic effect that results from a sustained reduction of emotional tension that can be achieved both with antipsychotic drugs and also through psychosocial and environmental treatments suggests a possible mechanism for subsequent evaluation of complimentary therapeutic influences. Each program focused on the creation of a therapeutic milieu with characteristics that include respect for individual patients, a low-stress environment with clear expectations and dependable interpersonal relations, and an effort to involve the patients as active participants in their recovery process. Subjective experiences were also respected. Therapeutic relationships incorporated the potential for recovery from psychosis, and may have engendered hope in patients and families.

The Finnish Need-Adapted Approach stands out as the most different among these acute treatment programs. The application of systemic family therapy and the intent to influence the client’s natural environment by modeling and fostering the development of health-promoting interactions contrasts with the development of therapeutic milieus within a specialized facility as a primary locus of treatment in the other programs. Perhaps there is a similarity, however, if we consider the Finnish approach as an effort to create an “in vivo” therapeutic milieu through influencing the natural social milieu. The Soteria San Francisco program did not systematically incorporate families into the treatment process (meeting with families on an as-needed basis), but families were involved in ongoing therapy meetings in both the Soteria Berne and

Swedish Parachute treatment programs. The Finnish approach also incorporated families, but meetings frequently took place in the family home. Soteria Berne added family psycho-education, social and vocational rehabilitation components, and social network development into their treatment model. In both the Finnish and Swedish models an interdisciplinary mobile crisis team made first contact with the client and their family. In contrast with the other treatment programs, Soteria San Francisco had a longer maximum antipsychotic postponement period of up to 6 weeks, compared to 3–4 weeks in Soteria Berne, 3 weeks in the Finnish Need-Adapted project, and 1–2 weeks in the Swedish Parachute program. The European programs, in contrast with Soteria San Francisco, incorporated long-term follow-up services. The Soteria San Francisco, Soteria Berne and Swedish Parachute programs intentionally promoted the development of post-discharge social support networks. A comparison of these four treatment approaches is presented in Table 2.

## Discussion

Heterogeneity in schizophrenia is a long-standing problem that inhibits the development of scientific knowledge needed to allow specific targeting of treatments to patient needs leading to improved outcomes. Before the advent of antipsychotic medications, repeated observation of a proportion of patients experiencing spontaneous remission led Langfeldt to coin the term “schizophreniform disorder”. Follow-up studies over several decades, too, revealed about 25% of all schizophrenia patients recovered or experienced long-standing remissions after suffering from severe psychosis over many years (Bleuler, 1978; Ciompi, 1980, 1988a; Harding, Brooks, Ashikaga, Strauss, & Breier, 1987; Huber, Gross, Schuttler, & Linz, 1980). Rather than further investigating these naturally occurring subgroups, recent decades of research and clinical practice has blurred the distinction between schizophrenia and schizophreniform disorder through: (1) distinguishing these diagnostic categories using a duration of symptom criteria rather than research-supported prognostic criteria (Bola et al., 2006; Bola & Mosher, 2002; Langfeldt, 1939; Vaillant, 1962); and (2) by not developing distinct treatments for these different diagnoses, as anticipated from the medical model. Yet the advance of scientific knowledge requires an open-minded re-examination of theory in light of new evidence, particularly when repeated and converging observations paint a picture different from prevailing theory. The fact that schizophrenia does not uniformly have a Krapelnean type of deteriorating course should not be cause for alarm, but reason for further investigation. Clearly some patients have illnesses with a deteriorating course, others function at a high level with regular medication (Saks, 2007), others recover after many years and take themselves off medication against medical advice (Harrow & Jobe, 2007), and some early-episode patients experience remission and recovery with psychosocial treatment and do not require antipsychotic medications. Developing the knowledge to identify different subgroups of patients and provide treatments targeted to the form of their illness does not only involve advancing scientific knowledge but is also an expression of the professional ethic to put patients first.

Distinct from the early-episode acute treatment programs considered here, prodromal intervention programs designed to postpone or prevent psychosis among high-risk youth provide a pathway to care for a minority of first-episode patients, even in areas with well developed low-threshold detection teams (78 of 203, 38%; Johannessen et al., 2005). These high-risk individuals have characteristics of a poor



Table 2. Comparison of psychosocial acute treatments.

	Antipsychotic postponement period (weeks)	Therapeutic milieu	Family involvement	Social network development	Follow-up period	Mobile crisis team
Soteria San Francisco	4–6	Yes		Yes	2 years	
Soteria Berne	3–4	Yes	Yes, outpatient and psychoeducation	Yes	2 years	
Finnish Need-Adapted	3	Yes, or home treatment	Yes – often at family home therapy meetings		Indefinite	Yes
Swedish Parachute	1–2	Yes, in 10 of 17 units	Yes, in- and outpatient including psychoeducation	Yes	5 years	Yes through 5 years

prognosis subgroup including insidious onset, social functioning decline and longer duration of untreated psychosis (Friis et al., 2005; Johannessen et al., 2005). On the other hand, those responding well to an initial psychosocial and/or low-dose treatment appear to constitute a subgroup with the combination of better prognostic characteristics and fewer cardinal schizophrenia symptoms (Bola et al., 2006; Bola & Mosher, 2002). Specialized, complimentary, phase-specific treatments may help improve outcomes.

A notable characteristic of the cautiously titrated approach in first-episodes of initial psychosocial treatment combined with time-limited postponement of medication, followed by a low-dose medication strategy in the studies described here is that it was mostly carried out in supervised 24-hour care facilities. This improves patient safety and creates an opportunity to quickly initiate antipsychotic treatment in cases of acute exacerbation or absence of response to psychosocial treatment. This strategy also supports a natural selection of patients into three treatment-responsive subgroups: one group requiring only psychosocial treatment, a second group receiving psychosocial treatment plus low doses of antipsychotics (1.5–3 mg haloperidol equivalents per day) plus benzodiazepines for short periods, and a third group receiving moderate antipsychotic doses for longer periods (Cullberg, 2006). There may be considerable benefit to evaluating the effectiveness of this treatment strategy in a RCT compared to usual treatment while also incorporating a longitudinal research design capable of supporting the identification of several treatment-response subgroups (latent trajectory classes; Muthen & Muthen, 2000).

In addition to the range of psychosocial treatment components incorporated into the treatment programs described here, employing mental health consumers as staff-providers might also be advantageous. In recent years there has been an increase in the employment of mental health consumers as advocates and as providers of mental health services, particularly in self-help agencies. There is some evidence that consumer involvement in self-help agencies is associated with an expansion of social networks (Hardiman & Segal, 2003) and that positive outcomes are promoted by “an organizational structure that allows clients to meaningfully participate in decisions about their care” (Segal & Silverman, 2002, p. 309). Enhancing the potential for therapeutic alliance based on shared experience, consumer-providers may also facilitate access to existing post-discharge social support networks.

The conscious effort to incorporate emerging research knowledge into the design of these early-episode treatments to improve patient outcomes puts these programs on the leading edge of translational science (translating scientific knowledge into clinical practice) as articulated in the National Institute of Health’s Roadmap for Medical Research (<http://nihroadmap.nih.gov/clinicalresearch/overview-translational.asp>). In NIH Director Zerhouni’s words, “It is the responsibility of those of us involved in today’s biomedical research enterprise to translate the remarkable scientific innovations we are witnessing into health gains for the nation” (Zerhouni, 2005, p. 1621). It may be time to consider how best to combine the imperatives of translational science with the integration of psychosocial components in early-episode psychosis treatment to promote the development of scientific knowledge (what works for whom under what conditions) and a balanced, biopsychosocial, recovery-oriented model of mental health services. The above-cited studies at least highlight the fact that no disadvantages, and several advantages have been noted with no or a low-dose antipsychotic medication in combination with psychosocial interventions for first episode schizophrenia spectrum patients.

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