

Long-term outcomes of psychodynamic residential treatment for severely disturbed young adults: A naturalistic study at a Swedish therapeutic community

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Aims: This study examined the long-term effectiveness of a treatment model at a Swedish therapeutic community for young adults with severe personality disorders, combining milieu therapy and inpatient long-term psychodynamic psychotherapy. **Methods:** Data were collected for the 56 residents between 1994 and 2008 at intake, termination and 2-year follow-up. Patient residency ranged from 2 to 60 months, with average psychotherapy duration of 30 months. Self-rated outcome was measured using the Symptom Checklist-90-R. Expert-rated outcomes comprised the Global Assessment of Functioning, the Strauss–Carpenter Outcome Scale and the Integration/Sealing-over Scale. A series of mixed-model analyses of variance with one fixed factor (time) was performed to examine the outcomes for the total sample of completers. Effect sizes for within-group change and percentages of improved, unchanged and deteriorated patients were calculated for patients participating in the data collection on all three time points. **Results:** All outcome measures showed significant improvement on a group level from intake to discharge. Most patients had maintained the therapeutic gains at the 2-year follow-up. The effect sizes were high and the Reliable Change Index provided evidence of good outcome for 92% of the patients at follow-up. The expert ratings gave somewhat larger effect sizes than the patients' self-ratings. **Conclusions:** The effect sizes and success rates are at a comparable level with corresponding studies of long-term treatments of personality disorders. Most patients had a substantial individual improvement from intake to termination and follow-up. This indicates the effectiveness of this highly specialized and intensive treatment approach for severely disturbed young adult patients.

• *Inpatients, Long-term psychodynamic psychotherapy, Outcome research, Personality disorders, Therapeutic community.*

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Psychodynamic inpatient treatments, often combining milieu therapy and psychotherapy, used to be one of the treatments of choice for patients with severe psychiatric diagnoses. According to clinical experience, this type of treatment can have decisive impact on the life circumstances of severely ill patients. However, because of the scarcity of well-conducted outcome studies, such combined treatment is increasingly rare in Western countries. Several obstacles have to be met when evaluating long-term residential treatments. The data collection takes a long time, the number of patient included at each service is limited, the samples are heterogeneous, the treatments are adjusted to each individual patient, and

the ratio of drop-out from data collection is high. The clinical spectrum for this patient group is complicated and comorbidity is common (1).

Severe psychiatric conditions often arose early in the patients' lives. Half of all adults with mental disorders report that their problems began by their mid-teens, with three-quarters displaying symptoms by their mid-20s (2). Experts currently estimate that about one in five young people in the USA have a mental, emotional or behavioral disorder (3). In recent decades the total number of inpatient treatments in Swedish psychiatry decreased, but paradoxically increased for people between 15 and 25 years old (4).

Short-term treatments are insufficient for most patients with severe personality disorders and comorbid Axis I diagnoses. The symptoms are often so embedded in the personality that they demand a repetitive treatment over a long period. There are reports indicating that a combination of psychoanalytically oriented treatment and partial hospitalization is more successful for patients with personality disorders than treatment as usual in conventional psychiatric care (5–10). However, only few studies focus on young adults in outpatient (11–14) and inpatient treatment (15–18).

Aims

The purpose of the present study was to evaluate a highly specialized and intensive treatment approach, integrating milieu therapy and inpatient long-term psychodynamic psychotherapy for young adult inpatients with severe personality disorders. Below we report the short- and long-term treatment effects for a sample of completers over a 14-year period.

Material and methods

Setting

This longitudinal, naturalistic study includes data collected at admission, discharge and 2 years' post-treatment between 1994 and 2008, when the service closed down. The patients were residents in the Baggensudden therapeutic community for young adults aged 18–30 years and suffering from psychotic problems or severe personality disorders in combination with self-destructive behavior. The therapeutic community was run by a foundation and opened in 1984 in Stockholm County, following the model of Soteria (19, 20) and Soteria Bern (21, 22).

Only self-referred and well-motivated patients were accepted. After an initial telephone interview, the treatment applicants met both residents and staff. They were informed about the treatment program and the rules, and underwent a longer interview with their coming therapist and the head of the therapeutic community. Patients with a primary diagnosis of drug dependency disorder were excluded. The community accommodated 10 patients at a time. The staff included a managing director, part-time secretary and six staff members (both milieu therapists and psychotherapists). All therapists had at least basic, and in most cases advanced, psychotherapeutic training. The clinical staff received regular, qualified, psychoanalytically oriented supervision in both individual and milieu therapy. The staff–patient ratio was 0.75.

Treatments

The treatment model combined milieu therapy and long-term psychodynamic psychotherapy. The therapists and patients shared the day-to-day running of the institution,

as well as common activities outside the therapy room. The community was staffed during daytime but not at nights or weekends when the patients were supposed to take responsibility for themselves. The ambition was to create a safe, home-like and relationship-intensive atmosphere with firm structure and clear rules. These arrangements were intended to facilitate actualization of the patient's disturbed forms of relating and at the same time to encourage a more realistic collaboration promoting identification with the therapist as a "new object" (23). In up-to-date terms, the keywords were therapeutic relationship, affect regulation and mentalization (24–26).

The patients were offered two psychodynamic psychotherapy sessions a week. The orientation was mainly ego-strengthening treatment counteracting regression and encouraging individuation. For most patients, the individual psychotherapy continued for a period after discharge from the therapeutic community and was followed by further "booster sessions". Patient residency ranged from 2 to 60 months, with average psychotherapy duration of 30.2 months, corresponding to approximately 200 sessions.

All patients took part in weekly group-therapy sessions focusing on the in-group dynamics. Each group was run by two therapists. Morning meetings for all patients and staff were held every weekday. The patients were also invited to participate in leisure activities.

The general policy was goal-oriented, targeted and minimal medication. Patients with borderline diagnosis were generally treated with antidepressant medication at intake; at termination, most were off regular medication. Patients with a psychosis diagnosis were generally on antipsychotic medication at both time points, even if the doses were lower at discharge.

Sample

During the inclusion period, 56 patients were admitted, 45 women and 11 men. Mean age at intake was 24.3 years (standard deviation, $s=3.57$ years; range 20–38 years). Initially, the treatment community focused on patients with long-term psychosis. Eventually, the target group became female patients with severe personality disorders and self-destructive behavior. Of those who remained in treatment ($n=47$), 41 patients (87.2%) had a DSM-IV Axis II diagnosis (27) at intake (most with borderline personality disorder) and 27 (57.4%) had an Axis I disorder; 20 patients (42.6%) had comorbid Axis I and II diagnoses (Table 1). In all, the participants were a heavily handicapped heterogeneous group of young adult psychiatric patients.

The attrition from admission to data analysis is presented in Fig. 1. Eight patients (five women and three men) interrupted their treatment at an early stage, within a range of 2 months. Of these, six were diagnosed with

Table 1. Number of patients remaining in treatment and in the follow-up group by DSM-IV Axis I and II diagnoses at intake, termination and follow-up.

	Intake		Termination		Follow-up	
	n	%	n	%	n	%
Patients remaining in treatment	47		30		21	
Axis I	27	57.4	11	36.7	7	33.3
Schizophrenia	4	8.5	2	6.7	1	4.8
Schizoaffective disorder	1	2.1				
Psychotic disorder	4	8.5	5	16.7	2	9.5
Mood disorder	8	17.0	1	3.3	2	9.5
Anxiety disorder	1	2.1	1	3.3		
Eating disorders	7	14.9	2	6.7		
Substance abuse	2	4.3			2	9.5
Axis II	41	87.2	25	83.3	15	71.4
Cluster B	36	76.6	17	56.7	8	38.1
Cluster C			2	6.7	2	9.5
Personality disorder NOS	5	10.6	7	23.3	6	28.6
Comorbid Axis I and II	20	42.6	7	23.3	4	19.0
No DSM-IV diagnosis			1	3.3	3	14.3
Follow-up group	21		21		21	
Axis I	14	66.7	7	33.3	7	33.3
Schizophrenia	3	14.3	1	4.8	1	4.8
Schizoaffective disorder						
Psychotic disorder	3	14.3	4	19.0	2	9.5
Mood disorder	4	19.0	1	4.8	2	9.5
Anxiety disorder	1	4.8				
Eating disorders	3	14.3	1	4.8		
Substance abuse					2	9.5
Axis II	17	81.0	17	81.0	15	71.4
Cluster B	16	76.2	13	61.9	8	38.1
Cluster C	1	4.8	2	9.5	2	9.5
Personality disorder NOS	1	4.8	3	14.3	6	28.6
Comorbid Axis I and II	9	42.9	4	19.0	4	19.0
No DSM-IV diagnosis			1	4.8	3	14.3

The patients could have more than one Axis II diagnosis.

borderline personality disorder and two with schizophrenia. Four drop-outs had been assessed with the Global Assessment of Functioning (GAF) scale before dropping out and their scores ranged from 25 to 40. No data were available for one further patient. Seven patients were still in treatment when the therapeutic community closed down, all women diagnosed with borderline personality disorder. Their mean ($\pm s$) Global Severity Index (GSI; Symptom Checklist-90-R, SCL-90) was 1.99 ± 0.54 , compared with treatment completers at intake ($n = 37$), initial GSI 1.90 ± 0.60 . Both the early drop-outs and the group still in treatment were excluded from further analysis.

Because of missing data, i.e. incomplete questionnaires, the sample size (n) for the different questionnaires varies slightly by instrument and measurement point. The results are reported separately for the total sample of completers (GSI and GAF $n = 40$; Strauss-Carpenter Outcome Scale, SCOS, and Integration/Sealing-over Scale, ISOS $n = 39$) and for the "follow-up group" of those patients who participated in the data collection on all

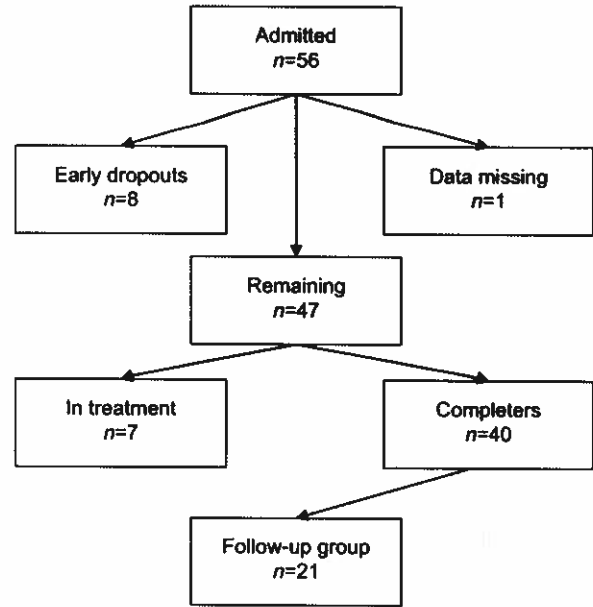


Fig. 1. Flowchart of attrition from admission to data analysis. The sample size (n) for the completers varies slightly with each instrument and measurement point, while n for the follow-up group of patients with data varies at admission, termination and 2-year follow-up depending on the instrument.

three time points (GSI $n = 14$; GAF and SCOS $n = 21$; ISOS $n = 20$). The mean GSI for the "follow-up group" at intake was 2.00 ± 0.44 , compared with patients with missing post-treatment data, initial GSI 1.84 ± 0.65 .

Written informed consent was obtained from all participants. The ethical committees of Stockholm County Council and the Swedish Council for Social Research approved the study.

Measures

Self-rated outcome was measured using the *Symptom Checklist-90-R* (SCL-90-R) (28, 29). Items are rated on 5-point Likert-scales ranging from 0 ("not at all") to 4 ("very much"). Global Severity Index (GSI) is used here as an aggregate measure.

Expert-rated outcomes comprised three measures. The *Global Assessment of Functioning* (GAF) (27) was rated by the psychiatric consultant on the bases of clinical interviews and personal knowledge of the patients on a scale from 1 to 100.

The *Strauss-Carpenter Outcome Scale* (SCOS) (30, 31) consists of four subscales scored by the staff on a scale from 0 to 4 (duration of useful work, frequency of social contacts, symptom severity, duration of hospitalization for psychiatric disorders). The sum of the four scores is reported here as a global outcome measure.

The patients' recovery style was rated by the staff using the *Integration/Sealing-over Scale* (ISOS) (32). The

scale consists of 13 items and a global rating of *Integrative Recovery Style* on a scale from 1 ("integration") to 6 ("sealing-over"), used here as a measure of the patients' capacity to recognize, acknowledge and reflect upon their personality-related difficulties.

The patients were diagnosed at intake, termination and the 2-year follow-up by an experienced psychiatric consultant according to DSM-IV.

Analysis

All statistical analyses were conducted using the statistical package SPSS 18. GSI, GAF, the global SCOS score and the global ISOS score were chosen as outcome measures. To analyze outcome for all completers, a series of mixed-model analyses of variance (ANOVAs) with one fixed factor (time) was performed. Based on Akaike's information criterion, Compound Symmetry was set as the variance structure for all the outcome measures. A Bonferroni correction for eight comparisons between time points and across outcome variables gives a *P*-value of 0.006 to keep the family-wise error at an alpha level of 5%.

The follow-up group of patients with complete data at admission, termination and 2-year follow-up is included in descriptive statistics. Effect sizes for within-group change were calculated based on estimated marginal means and standard deviations at intake. In addition, the Reliable Change Index (RCI) (33, 34) was calculated in order to establish the percentage of improved, unchanged and deteriorated patients in the follow-up group. For self-reported symptom severity (the GSI of the SCL-90), RCI was calculated for each patient using internal consistency as reported in the Swedish SCL-90 manual (Cronbach's $\alpha = 0.98$) (35) and a 0.95 confidence interval. For the present sample ($s = 0.54$) S_{diff} was 0.11, which yielded a RCI of 0.21. For clinically significant improvement, the cut-off between clinical and non-clinical population was determined in accordance with Jacobson & Truax' (34) criterion (c), as recommended when the distributions of the functional and dysfunctional population overlap. Comparing the present sample and a functional group of 593 young adults in Stockholm County (GSI mean = 0.76 ± 0.62) (36), the cut-off for GSI was calculated as 1.34. At intake, all patients but one in the follow-up group had a GSI above this cut-off, i.e. 92.9% of patients belonged to the dysfunctional group.

A reliability study of routine clinical GAF ratings in Swedish outpatient settings yielded an intraclass correlation of 0.81 (37). For the present sample ($s = 9.56$), this gave the S_{diff} of 5.89. The confidence level of 0.90%, recommended for global or functional ratings made by clinicians (38), yielded a RCI of 10 GAF points. The same calculation method and RCI level for GAF was used in two large-scale Swedish studies (12, 39). For SCOS (5-point scale), an average interrater reliability of 0.89 was reported (40). For the present sample ($s = 2.69$)

this resulted in S_{diff} of 1.26 and a RCI equivalent to 3 SCOS points at a 0.95 confidence interval. For ISOS (6-point scale), an interrater reliability of 0.80 was reported (41). For the present sample ($s = 0.92$), S_{diff} was 0.58, which resulted in a RCI equivalent to 2 ISOS points at a 0.95 confidence interval.

Results

For the follow-up group of patients diagnosed at intake, termination and follow-up, the most common diagnosis at all time points was Axis II cluster B (mostly borderline personality disorder) (Table 1). However, at follow-up several cases moved to personality disorder not otherwise specified (NOS). Schizophrenia and other psychotic disorders, as well as mood disorder, anxiety disorder and eating disorder became less frequent, comorbid Axis I and II diagnoses became more than half as frequent, and three cases no longer fulfilled any diagnostic criteria.

A series of mixed-model ANOVAs showed that all outcome measures changed significantly at termination (Table 2). Between termination and follow-up, only SCOS showed a significant improvement.

Effect sizes of change were calculated for each measure and time point based on estimated marginal means from the mixed-model analyses and standard deviations at intake. According to conventional criteria (42), all effect sizes were high between intake and termination, as well as between intake and follow-up, whereas effect sizes between termination and follow-up were small or modest (Table 3). Note, however, that the expert ratings (GAF, SOSC, ISOS) gave somewhat larger effect sizes than the patients' self-ratings.

At the group level, patients moved from high symptom severity (GSI) in the dysfunctional spectrum to lower levels in the functional spectrum at both termination

Table 2. Mixed-model analysis of change in outcome measures from intake to termination and follow-up.

	Model				Intake vs. Termination†			Termination vs. Follow-up†		
	<i>n</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>
Self-reported measures										
GSI	40	2/46	20.32	0.000	49	5.41	0.000*	45	1.03	0.93
Expert-rated measures										
GAF	40	2/50	53.13	0.000	54	8.64	0.000*	50	1.44	0.47
SCOS	39	2/47	52.74	0.000	50	9.74	0.000*	46	3.99	<0.001*
ISOS	39	2/50	48.29	0.000	54	8.82	0.000*	50	2.34	0.02

GSI, Global Severity Index (Symptom Check List-90-R); GAF, Global Assessment of Functioning Scale; SCOS, Strauss-Carpenter Outcome Scale; ISOS, Integration/Sealing-over Scale.

*Significant after a Bonferroni correction.

†Bonferroni-correction for eight comparisons gives a *P*-value of 0.006 to preserve a family wise error at an alpha level of 5%.

Table 3. Descriptive statistics for the follow-up group and effect sizes of outcome data based on estimates from the mixed-model analyses.

	Intake		Termination		Follow-up		es ¹	es ²	es ³
	Mean	s	Mean	s	Mean	s			
Self-reported measures									
GSI	2.00	0.44	1.36	0.60	1.12	0.54	0.97	0.23	1.20
Expert-rated measures									
GAF	37.05	9.56	56.24	9.46	60.24	13.17	1.70	0.35	2.05
SCOS	6.33	2.69	10.62	2.48	12.95	2.42	1.20	0.86	2.06
ISOS	4.95	0.94	3.60	0.99	2.85	0.81	1.56	0.60	2.16

GSI, Global Severity Index (Symptom Check List-90-R); GAF, Global Assessment of Functioning Scale; SCOS, Strauss-Carpenter Outcome Scale; ISOS, Integration/Sealing-over Scale; s, standard deviation.

Descriptive statistics are based on patients with complete data for all three time points (GSI *n* = 14; GAF *n* = 21; SCOS *n* = 21; ISOS *n* = 20) and are not compatible with the effect sizes.

es¹, Intake to termination; es², Termination to follow-up; es³, Intake to follow-up.

and follow-up. However, in only four cases at termination and two at follow-up were the GSI scores below the norm group mean (young adults in the same catchment area). The patients' mean pre-treatment score of global functioning corresponded to levels typical for psychiatric inpatients (range 20–40; median = 40). Their mean functioning level improved at termination (range 35–70; median = 55) and continued to increase up to termination (range 20 [one outlier; otherwise 45–80]; median = 62), being in the range of outpatients in psychotherapy. At follow-up, only three patients reached

levels above the conventional cut-off for the functional group (GAF = 71).

Based on the RCI cut-off scores, most patients showed significant improvement from intake to termination on both self-rated symptoms and expert-rated measures (Table 4). The percentage of improved patients increased at follow-up. Deterioration was observed on GSI in one case from intake to follow-up and in five cases from termination to follow-up, in one case on GAF from intake to follow-up, as well as from termination to follow-up, and in one case on SCOS from intake to termination. Applying the criterion of clinically significant change on GSI, six patients (42.9%) showed reliable change from the dysfunctional to the functional range at termination and 11 patients (78.6%) at follow-up, whereas one patient showed clinically significant deterioration at follow-up.

The GSI and GAF gain scores were tested for associations with such variables as sex, age and treatment duration. The only significant (negative) correlation was between age and GSI gain score at termination ($r = -0.88$; $P = 0.000$). The number of cases was too small for more advanced statistics.

Discussion

The results showed that the patients had a better psychological status at discharge and follow-up than pre-treatment, which included positive changes on all outcome measures. In clinical terms, the patient group moved from highly dysfunctional to more functional levels of symptom severity and global functioning, and most patients

Table 4. Reliable change index for the follow-up group intake to termination, intake to follow-up, and termination to follow-up.

	Reliable improvement		No reliable change		Deterioration	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Self-rated measures						
GSI (<i>n</i> = 14)						
Intake to termination	9	64.3	5	35.7	0	
Intake to follow-up	13	92.9	0		1	7.1
Termination to follow-up	9	64.3	0		5	35.7
Expert-rated measures						
GAF (<i>n</i> = 21)						
Intake to termination	17	81.0	4	19.0	0	
Intake to follow-up	18	85.7	2	9.5	1	4.8
Termination to follow-up	8	38.1	12	57.1	1	4.8
SCOS (<i>n</i> = 21)						
Intake to termination	17	81.0	3	14.3	1	4.8
Intake to follow-up	20	95.2	1	4.8	0	
Termination to follow-up	11	52.3	10	47.6	0	
ISOS (<i>n</i> = 20)						
Intake to termination	10	50.0	10	50.0	0	
Intake to follow-up	15	75.0	5	25.0	0	
Termination to follow-up	3	15.0	17	85.0	0	

GSI, Global Severity Index (Symptom Check List-90-R); GAF, Global Assessment of Functioning Scale; SCOS, Strauss-Carpenter Outcome Scale; ISOS, Integration/Sealing-over Scale.

showed reliable improvements. The largest effect sizes were on the three expert-rated measures: GAF, SCOS and ISOS. SCOS was also the only measure that improved significantly between termination and follow-up. However, the results consistently indicate that most patients gained further improvement during the 2 years of follow-up. As in most previous studies (43), data based on therapists and expert judges produced larger effect sizes than self-report data.

The large pre-post effect sizes found in the present study are within the range found both in RCTs (7) and naturalistic studies (44) of psychodynamic treatment for patients with personality disorders. In the first-mentioned review, psychoanalytically oriented partial hospitalization tended to come off best compared with general psychiatric care. Furthermore, the results are comparable with the within-group effect sizes after long-term psychodynamic therapy for complex mental disorders (45). Similar outcomes were reported in a long-term follow-up of analytic group therapy, including about two-thirds of patients with personality disorders (46), a Danish study of a 5-month day-treatment program for patients with severe personality disorders, combining group treatments and individual psychotherapy (8), a Norwegian study of an 18-week day-treatment program for poorly functioning patients with personality disorders (47), and a Belgian 1-year follow-up of a psychoanalytic hospitalization-based treatment of personality disordered patients (9, 10).

The success rate at termination was moderate for GSI (64.3% significantly improved patients) and large for GAF (81.0% improved), and increased further at follow-up (92.9% for GSI and 85.7% for GAF). Using the more rigorous criterion based on German reference samples for GSI (48) ($RCI = 0.43$), the success rates would be slightly lower (57.1% at termination and 71.4 at follow-up). The percentage of patients with clinically significant improvement both at termination and follow-up exceeded the numbers reported there, probably because all patients but one belonged to the pre-treatment, dysfunctional group. Leichsenring & Leibing (44) calculated a mean recovery rate from personality disorders of 59% after a mean of 15 months of psychodynamic therapy. The percentage of improved patients can also be compared with the mean overall success rates after long-term psychoanalytic therapy (49) with 64% improved patients at termination and 55% at follow-up. After long-term analytic group psychotherapy, 60–86% of the patients were recovered or significantly changed at follow-up (46). One-year follow-up after therapeutic community treatment for severe personality disorders reported reliable improvement of 61% for change in borderline symptoms (50). In the Norwegian day treatment study, 74% of completers were categorized as improved 1 year post-termination (51). In a comparison of three hospital-based programs for patients with personality disorders (one inpatient and two day treatments),

the percentage of reliable improved patients differed between the settings and ranged from 58% to 74% (52).

In the present study, both the effect sizes and the success rate increased between termination and follow-up. However, these changes were statistically significant only for the expert-rated SCOS. In contrast, an 18-month follow-up of psychoanalytically oriented partial hospitalization treatment for borderline patients could show that patients who completed the partial hospitalization program not only maintained their substantial gains but also showed a statistically significant continued improvement on most measures (5). The level of post-treatment changes in the present study could be deflated by inclusion of psychotic patients in the early phase of the history of the therapeutic community.

Only one patient, and only according to one of the measures (expert-rated SCOS), deteriorated from intake to discharge. However, this negative outcome disappeared at the follow-up. In the long term, up to the 2-year follow-up, one patient deteriorated on both GSI and GAF. The percentage of deteriorated patients was low and comparable with those found in a comparison of three hospital-based treatments for personality disorders, ranging from 5% to 12% (52).

Some patients no longer met the personality disorder criteria at the follow-up. Furthermore, the number of schizophrenia and other psychotic disorders decreased. Increasing evidence in recent decades questions the distinction between DSM clinical syndromes (Axis I) and personality disorders (Axis II), as well as the assumed chronicity of personality pathology. Recent large-scale prospective studies on personality-disorder outcomes reveal that a substantial number of the patients no longer meet the diagnostic criteria even over as short of intervals as 1 or 2 years (53). Furthermore, findings from epidemiological research may suggest that personality disorders are more benign and episodic than previously believed (54). However, a study of borderline personality disorder lasting a decade (55) showed severe and persistent impairment in social functioning, despite high rates of diagnostic remission. The patients in our study who met the DSM-IV personality disorder, schizophrenia and psychotic disorder criteria prior to treatment, also displayed several signs of harmful dysfunctions (as suggested in reference 56), such as self-harm, suicide attempts, high GSI and low GAF. In addition, the post-treatment diagnostic changes were followed by significant improvements in terms of GSI and GAF. Thus, it is unlikely that these changes only reflect the natural courses of severe disorders. The treatment model at the therapeutic community was specially designed for young adults with severe psychotic or personality disorders, and it seems that these problems were ameliorated at least in some cases. This may suggest that such patients might benefit from active therapeutic efforts rather than sheltered

housing, where many of the patients in these diagnostic categories are nowadays kept.

Even if the present study does not include a window on the treatment process, some hypotheses can be formulated in retrospect about factors that could contribute to this overall good outcome. The patients were self-referred and motivated for the treatment; alternatively, they were encouraged by their social network to apply for treatment. The treatment environment was well structured and predictable, and at the same time flexible enough to fit the individual patient's needs. The small staff group and the low turnover of staff contributed to the lucidity and predictability of the treatment milieu. The highly specialized treatment was guided by an explicit and consistent theoretical framework. As concluded by Bateman & Fonagy (57), structured treatments improve outcomes for borderline patients, but a focus on specific psychological processes brings additional benefits. The treatments were open-ended and individualized treatment plans were formulated and continuously revised. Furthermore, long-term treatments were available when needed. The correlation of the length of treatment and reduction of borderline symptoms was also observed for patients with severe personality disorders in therapeutic community treatment (50) and in residential psychosocial treatment (52). The termination phase included gradual phasing out and a step-down program. The individual psychotherapy often continued after discharge and the patients had several planned opportunities to return and visit the therapeutic community.

The strength of this study is the longitudinal follow-up. The integration of psychotherapists in the residential milieu has not been previously examined in outcome studies. Several limitations of naturalistic studies are also applicable here, such as non-random assignment, lack of a clinical comparison group or experimental control, incomplete data and the possibility of selective reporting. Thus, no conclusions about the comparative effectiveness of the treatment modality could be drawn. Another limitation is the small sample. Thus, there was insufficient statistical power for a meaningful examination of moderator variables. On the other hand, the home-like design of the treatment environment was an important ingredient in the therapeutic approach. Development of new treatment forms, such as the psychotherapists being at the same time milieu therapists, is mostly conducted on a small scale. Selective sampling of motivated patients and well-trained therapists may contribute to the relatively positive outcomes, while limiting generalizability. A further limitation is the heterogeneous diagnostic group, making it difficult to identify the beneficial ingredients in the treatment. However, the treatment model developed during the 24-year period, according to the growing experience of the therapists and the results from an evaluation study (23). The first generations of patients were mostly

diagnosed with schizophrenia and psychotic disorders, often in combination with severe and repeated suicidal attempts, while the high percentage of patients with personality disorders, often in combination with self-harm, was characteristic for the subsequent generations of patients. The research design, with consecutive inclusion of new cases over an extended time, limits the replicability of the findings. Most importantly, it was not possible to study the mechanisms of change. A common limitation of comparing outcomes in different studies of residential treatment is the considerable difference in treatment modalities.

Conclusions

The effect sizes and success rates obtained in the present study are at comparable level with corresponding studies of long-term treatments of personality disorders. Most patients had a substantial individual improvement from intake to termination. Some even improved from termination to follow-up. At follow-up, almost all patients maintained their therapeutic gains. This indicates the effectiveness of this highly specialized and intensive treatment approach for severely disturbed young adult patients.

Young adults with psychotic problems or severe personality disorders are a highly relevant group for outcome studies. For as many as three-quarters of adults with mental disorders, their symptoms became manifest in this age span (2). In future research, a combination of individual therapy, group therapy and milieu therapy needs to be studied in different settings and with different but more homogenous diagnostic groups.

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