

Prospective Long-term Follow-up of Depressed Patients with and without Suicide Attempts

T. Bronisch and H. Hecht

Max-Planck-Institute of Psychiatry, Clinical Institute, Department of Psychiatry, Kraepelinstr. 2–10, W-8000 Munich 40, Federal Republic of Germany

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Summary. This 4–6-year prospective follow-up study compared reactive depressives with ($n = 48$) and without suicide attempts before index admission ($n = 24$). Both groups showed a favourable course and outcome concerning psychiatric diagnoses (DSM-III), psychopathology, social integration, and social functioning as well as displaying a nearly identical course and outcome. In both groups, two patients committed suicide attempts during the follow-up period. 2 (1) male patients from the group with suicide attempts committed suicide.

Key words: Depression – Suicide attempt – Long-term follow-up

Introduction

Studies comparing depressive patients with suicide attempts with those without suicide attempts indicate that the former report more suicide, suicide attempts and alcoholism in first-degree relatives [4], have more often lost a parent by death, divorce or separation [4, 40], and have experienced more discord between parents [40]. The attempter groups are overrepresented in the lower socioeconomic class [36], and immediately before index admission have experienced more loss events, less social support [35], and more marital discord [8, 36]. In summary, all these studies point to risk factors for depressed attempters, which may also predispose to a worse course and outcome of the depressive disorder. However, until now none of these studies have compared the course and outcome of depressives with and without suicide attempts in their preadmission history.

This paper reports on the course and outcome of these groups of depressed patients 4–6 years after their first assessment [4]. Course and outcome are evaluated with regard to psychopathology, diagnoses according DSM-III, social functioning and social support at index treatment and at follow-up. Furthermore, periods of earning disability, utilization of medical services, and suicide attempts during the follow-up interval were retrospectively assessed.

We expected that the risk factors reported above for depressive attempters would predispose to a worse course and outcome in terms of psychopathology and social functioning, suicide attempts and suicides.

Material and Methods

Patients at Index Treatment

Immediately before the admission to the Crisis Intervention Ward of the Max-Planck-Institute of Psychiatry (MPI-P) 48 subjects had attempted suicide (suicide attempters, SA). Twenty-four subjects had no history of previous suicidal attempts and are referred to as “non-suicide attempters” (NSA). Both groups fulfilled the criteria of a brief or prolonged depressive reaction (ICD-9: 309.0 or 309.1) by the consensus of two experienced psychiatrists. Therefore, chronic depression and substance abuse or dependency had been excluded as diagnoses. Adolescent patients and those with an inpatient treatment of less than 5 days were excluded from the study.

The definition of suicide attempts was that of “parasuicide” by Kreitman et al. [21]. Suicide attempts were rated as severe if an intoxication reached stage IV or V according to the Reed Scheme [31]. Additionally, “hard” methods with a high probability of a lethal outcome such as strangulation attempts, pistol shots, gashes or injections of a high dosis of insulin, led to the classification of a serious attempt. Eight (17%) out of 48 suicide attempts of patients before index admission were rated as severe. Eleven (23%) out of the 48 patients had attempted suicide at least twice before.

Methods

The interviewers were an experienced psychiatrist and an experienced clinical psychologist. Both had received intensive training in the use of the study interviews and observers' rating scales.

All patients were assessed at index admission, index discharge and 4–6 years later at follow-up.

The DSM-III-Axis I diagnoses were assessed at index admission and at follow-up using the Diagnostic Interview Schedule (DIS, Version II, [32] German version [43]). The test-retest and the interrater reliability of the DIS can be regarded as sufficiently high [33, 42, 44].

The psychopathological state of all patients was assessed at admission and discharge as well as at follow-up by the Inpatient Multidimensional Psychiatric Scale (IMPS, [24]; German version [18]). The 12 primary factors of the IMPS correspond well to known clinical syndromes. Only the depression-specific factors “anxious depression”, “retardation and apathy”, “impaired func-

tioning" [18], as well as the factors "excitement" and "hostile beligerence" were considered. The IMPS was filled in by trained therapists at index admission and discharge.

Psychosocial functioning was assessed by means of the Global Assessment Scale (Gas, [9]) at follow-up and of the Social Interview Schedule (SIS, [7], modified German version [16, 17], at index treatment and follow-up. The SIS assesses the subject's social situation, covering 13 social role areas (e.g. work, child-rearing) in the three following "dimensions", namely, objective social conditions (O), management of social difficulties (M), and satisfaction with social roles (S). In contrast to the first two dimensions, S is rated by the patient himself. The ratings for each category are evaluated according to a 4-point scale on which (1) is equivalent to no restrictions/no difficulties/very satisfied and (4) to severe restrictions/severe difficulties/very dissatisfied. Additional items allow for the construction of two social support indices which are comparable to the indices defined by Surtees [38]. Close social support comprises the quality and number of close ties and diffuse social support covers the quality and amount of superficial contacts. High global scores indicate a lack of support. The SIS is a cross-sectional instrument (reference period: the last 4 weeks). The interrater reliability of the SIS is judged to be sufficiently high [10, 16].

In order to allow for a detailed description of the course of the illness over the 4–6 year follow-up period, an attempt was made to evaluate the intensity of the different main psychopathological syndromes at 3-month intervals. Furthermore, the length and type of treatment, times of earning disabilities, as well as suicide attempts during the follow-up period were assessed with checklists querying the patients themselves.

Control Group

The data of the healthy control group were derived from a representative general population sample (The Munich Follow-up Study, MFS, [44]). Sex and age were matched for the analysis of variables of psychopathology (IMPS) and social integration/social functioning (SIS).

Results

Patients at Follow-up

After 4–6 years, 28 (58%) of the 48 SA and 17 (71%) of the 24 NSA could be followed-up and assessed by one of the two interviewers at the clinic of the MPI-P. One male patient of the SA group had committed suicide and another had died of unknown causes; however, the circumstances of the death of the second male patient point to a suicide. During the follow-up period, two of the SA and two of the NSA group attempted suicide. Thirteen patients refused to participate in the follow-up interview, 5 patients could not be located and 8 patients lived outside Bavaria and, therefore, could not be contacted.

Comparison of Patients Followed-up and not Followed-up

The followed-up patients ($n = 45$) and the two dead persons were compared with the patients not followed-up ($n = 25$) in regard of the over 70 variables assessed at index treatment: Sociodemographic characteristics, duration of index treatment, previous treatments, DIS/DSM-III diagnoses, suicide attempts, repeated suicide attempts, and severity of suicide attempts, psychopatho-

Table 1. Psychotherapeutic/psychiatric treatments of the personally followed-up patients before index treatment ($n = 45$)

	Suicide attempters (SA) $n = 28$		Non-suicide attempters (NSA) $n = 17$	
	n	%	n	%
Inpatient treatment (< 6 weeks)	3	11	–	–
Outpatient treatment ^a	7	25	7	41
> 10 contacts	3	11	1	6
< 10 contacts	4	14	6	35

^a Outpatient treatment consisted of either psychotherapy or minor tranquilizers/antidepressants by psychiatrists, psychotherapists or general practitioners

logical syndromes (IMPS), psychosocial functioning and social support (SIS). Of these, only two variables differed between these two groups. This difference may be due to chance. Therefore, the followed-up group of 47 patients may be taken to represent the whole group of 72 patients.

Characteristics of the Patients Personally Followed-up Previous Treatments. Table 1 shows the psychotherapeutic/psychiatric treatments of the personally followed-up patients before index treatment.

Only the SA utilized inpatient treatment, which, however, lasted no longer than 6 weeks. There were no statistical differences between the two groups with regard to previous treatment.

Sociodemographic Characteristics. Table 2 shows the sociodemographic characteristics of the personally followed-up patients assessed at the time of index treatment.

In the NSA group, there were more married persons. There were no statistical differences between the two groups with regard to sociodemographic characteristics.

Index Treatment. The average duration of index treatment was 11.4 days (SD: 5.2) for SA and 11.5 days (SD: 5.6) for NSA. The therapy for both groups consisted of short-term dynamic psychotherapy [25] with daily sessions and additional daily group therapy sessions. No psychoactive drugs were administered during the hospitalisation period.

Follow-up Period. The follow-up period for both patient groups was very similar (NSA: $x = 61.6$ months, SD: 7.9; SA: $x = 59.9$, SD: 7.0).

Psychopathology

Table 3 shows the main psychopathological syndromes measured with the IMPS-Scale at index admission, index discharge, and follow-up.

During inpatient stay, there was a significant improvement of the factors "anxious depression", "retardation and apathy", and "impaired functioning" as depression-

specific factors in both patient groups. The comparison between index admission and follow-up reveals an improvement of most of the depression-specific IMPS factors: "anxious depression", "retardation and apathy", and "impaired functioning" in both patient groups, and of the factors "excitement" and "hostile belligerence" in the SA group. Between index discharge and follow-up only few differences could be observed: There was a significant improvement of the factors "excitement" and "hostile belligerence" in the SA group.

Table 2. Sociodemographic characteristics of the patients personally followed-up ($n = 45$)

	Suicide attempters (SA) $n = 28$		Non-suicide attempters (NSA) $n = 17$	
	n	%	n	%
Age (years)	$\times 33.5$ SD 10.1		$\times 36.2$ SD 10.3	
Sex				
Male	6	21	3	18
Female	22	79	14	82
Marital status				
Single	13	46	6	35
Married	8	27	10	58
Divorced	5	18	–	–
Separated	2	7	–	–
Widowed	–	–	1	6
Professional status				
Working	22	78	10	59
Housewife	3	11	5	29
Unemployed	2	7	1	6
Sick leave	1	3	–	–
In training	–	–	1	6
Social class ^a				
Lower	8	23	4	25
Middle	18	69	10	69
Upper	2	8	1	6

^a According to Moore and Kleining [28]

However, the group comparison of SA versus NSA at index admission, index discharge, and follow-up shows only one significant difference between the SA and NSA groups, i.e. the NSA group displayed a higher score of the factor "impaired functioning" at index admission than the SA group.

At index admission as well as at index discharge and at follow-up, the IMPS factors of both patient groups display significantly higher values compared with those of the age- and sex-matched healthy control groups.

DIS/DSM-III Diagnoses

Table 4 shows the distribution of DIS/DSM-III cross-sectional diagnoses (reference period: the last 4 weeks) at index admission and follow-up.

Most of the patients of the SA group (21/75%) and of the NSA group (12/71%) received at least one diagnosis at index admission and most of them the diagnosis of major depression (SA: 19/68%; NSA: 12/71%). As expected, there is a considerable decrease of all diagnoses (SA: 14/50%; NSA: 11/65%) in both groups at follow-up.

However, the direct comparison of SA and NSA with regard to the single diagnostic categories does not show any significant differences at index admission and follow-up. Furthermore, combining the anxiety disorders (panic disorder, agoraphobia, simple phobia, obsessive-compulsive disorder), the depressive disorders (major depression, dysthymic disorder), and the substance use disorders (alcohol abuse/dependence, drug abuse/dependence) again does not reveal any significant differences between SA and NSA at admission and follow-up. Finally, there were no significant differences between SA and NSA concerning the age of onset, duration of the longest depressive episode as well as frequency of depressive episodes before index admission if lifetime diagnoses of major depressions are considered.

Psychosocial Functioning

The mean time per year of earning disabilities was 0.89 months (SD: 2.42) for SA and 0.22 months (SD: 0.52) for NSA. There were no statistical differences between

Table 3. Expert-rated psychopathology (IMPS) at admission, discharge, and follow-up

	Suicide attempters (SA) $n = 28$			Non-suicide attempters (NSA) $n = 17$		
	Admission (median)	Discharge (median)	Follow-up (median)	Admission (median)	Discharge (median)	Follow-up (median)
Excitement	5.0	6.0 ^b	2.0 ^c	7.0	7.0	5.0
Hostile belligerence	9.0	7.0 ^b	0 ^c	7.0	5.0	3.0
Anxious depression	22.0 ^a	17.0	11.0 ^c	25.0 ^a	13.0	13.0 ^c
Retardation and apathy	11.5 ^a	4.5	5.0 ^c	12.0 ^a	2.0	3.0 ^c
Impaired functioning	2.0 ^a	0	0 ^c	4.0 ^a	0	0 ^c

^a Admission > discharge

^b Discharge > follow-up } $P < 0.05$ (Wilcoxon-test)

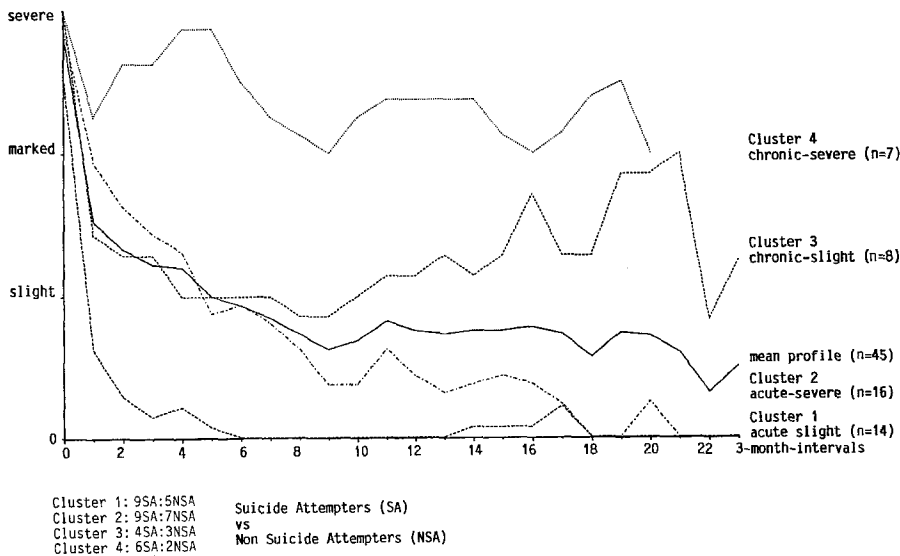
^c Admission > follow-up

Table 4. (DIS) DSM-III diagnoses at admission and follow-up (reference period: the last 2 weeks)

	Suicide attempters (SA) <i>n</i> = 28				Non-suicide attempters (NSA) <i>n</i> = 17			
	Admission <i>n</i>	%	Follow-up <i>n</i>	%	Admission <i>n</i>	%	Follow-up <i>n</i>	%
<i>DSM-III-DIS diagnoses</i>								
Major depression	19*	68	7	25	12*	71	3	18
Panic disorder	1	4	2	7	1	6	1	6
Agoraphobia	4	14	8	29	5	29	3	18
Simple phobia	5	18	5	18	2	12	6	35
Obsessive-compulsive disorder	2	7	1	4	1	6	0	0
Dysthymic disorder	1	4	0	0	0	0	1	6
Somatization disorder	2	7	0	0	1	6	0	0
Alcohol abuse/dependence	0	0	1	4	2	12	2	12
Drug abuse/dependence	1	4	1	4	0	0	0	0
At least one diagnosis	21*	75	14	50	12	71	11	65

* $P < 0.05$ (McNemar-Bowker test)**Table 5.** Objective social conditions, social dysfunction, satisfaction and social support prior to admission and follow-up (reference period: the last 2 weeks)

	Suicide attempters (SA) <i>n</i> = 28		Non-suicide attempters (NSA) <i>n</i> = 17	
	Admission (median)	Follow-up (median)	Admission (median)	Follow-up (median)
Objective conditions	1.43	1.53	1.45	1.44
Social dysfunction	1.89*	1.42	2.11*	1.44
Satisfaction	2.25	2.11	2.40*	2.00
Close social support	2.00	2.00	4.00	4.00
Diffuse social support	2.00	2.00	2.00	1.00

* $P < 0.05$ (Wilcoxon test)**Fig. 1.** Cluster analysis of symptom course during the follow-up interval (1983–1990)

the SA and NSA group or between age- and sex-matched controlgroups and the SA and NSA group concerning the mean time per year of earning disabilities.

At follow-up 3 out of the 13 single SA at index admission had married (NSA: 1 out of 6), whereas 3 out of the

8 married SA at index admission had divorced (NSA: 1 out of 10). At follow-up 36% (10) of the SA and 29% (5) of the NSA were married, whereas in a comparable age group of the normal population including urban and rural areas, roughly 80% [12] were married. There are no sig-

nificant differences between the marital status (married vs not-married) of both patient groups at index admission and at follow-up.

As can be seen from Table 5, there are no significant differences between index admission and follow-up concerning the SIS dimensions (objective conditions), or between close and diffuse social support in both patient groups. At follow-up there is a significant improvement in social functioning in both groups and in satisfaction in the NSA group.

There are no significant differences between the SA and NSA group at index-treatment and follow-up concerning all SIS dimensions.

Whereas at index treatment both patient groups were more dissatisfied and had more management problems as compared with the age- and sex-matched healthy control groups, at follow-up both patient groups were only more discontented than the control groups.

Cluster Analysis and Symptom Course

Based on the four-point rating of the psychiatric symptom intensity, which was evaluated at 3-month intervals for each patient, a mean symptom severity profile for all 45 patients was derived (Fig. 1).

This profile (see solid line of Fig. 1) indicates a marked decline in symptom severity from the first period of observation (index treatment) to follow-up, especially during the first two years.

In addition, an attempt was made to categorize different types of symptom courses by means of a cluster analytic method. A four cluster solution emerged ("optimizing function") which proved to be meaningful according to clinical judgement (see also Fig. 1).

The first cluster comprises 14 patients (31%) with a marked decline of symptomatology after index discharge and with a nearly complete dissolution of symptomatology during the first year (9 SAs; 5 NSAs). The second cluster comprises 16 patients (36%) with a marked decline in symptomatology during the first half year after index discharge and a complete dissolution at the end of the follow-up period (9 SA; 7 NSA). The third cluster comprises 8 (18%) patients displaying a marked decline in the symptomatology after index discharge but a slight increase during the follow-up interval at a slight to marked symptom level (4 SA; 3 NSA). The fourth cluster comprises 7 (16%) patients, who during the follow-up period displayed a marked or severe symptomatology with a slight tendency to improvement towards the end of the follow-up interval (6 SA; 2 NSA).

Length and Type of Treatment During the Follow-up Period

Table 6 shows length and type of treatment during the follow-up period. Only psychiatric and/or psychotherapeutic treatments are considered.

In both patient groups most patients (SA: 23/82%; NSA: 13/77%) did not utilize inpatient treatment and in both patient groups more than one third did not utilize outpatient treatment. There are no significant differences

Table 6. Inpatient and outpatient psychiatric/psychotherapeutic treatments of SA ($n = 28$) and NSA ($n = 17$) during the follow-up period

	Inpatient stays (days)				Outpatient treatment (session/contacts)			
	SA		NSA		SA		NSA	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
xs	20.2	56.8	9.8	18.7	27.5	63.5	33.1	41.9
0	22	79	13	77	12	43	6	35
1- 10	–	–	–	–	9	32	3	18
11- 25	1	4	–	–	2	7	–	–
26- 50	1	4	3	18	1	4	4	24
51-100	2	7	1	6	2	7	3	18
101-200	1	4	–	–	–	–	1	6
>200	1	4	–	–	2	7	–	–

between SA and NSA concerning duration of inpatient stays and outpatient treatments in terms of sessions/contacts.

Multiple Regression Analysis

By means of a multiple regression analysis according to the SPSS-program we tried to discover predictors for a worse outcome of the whole group of 45 patients using the following independent variables, which have been reported in epidemiological studies as potential risk factors for suicide attempts [30]: alcohol-, drug dependency (DSM-III) the diagnosis of a major depression (DSM-III), marital discord (SIS), and a suicide attempt at index treatment. The dependent variable at follow-up was the GAS score. No relevant single or multiple predictors for a worse outcome could be found; in particular, suicide attempts at index admission did not predict a worse outcome.

Discussion

To our knowledge this is the first prospective naturalistic long-term follow-up study comparing depressives with and without suicide attempts. The aim of this study was to investigate the degree to which suicide attempts influence the long-term course and outcome of depressives by comparing them with depressives without suicide attempts but with a comparable history of depressive episodes, sociodemographic characteristics, and utilization of psychiatric/psychotherapeutic help before and during index treatment.

The two salient findings are:

1. A rather favourable course and outcome of both patient groups (SA and NSA).
2. A similar course and outcome for SA and NSA.

The first result – a rather favourable course and outcome of the whole group (SA and NSA) – is an expected finding.

All patients met the diagnosis of an adjustment disorder with depressed mood according to ICD-9 criteria, so that chronic depressives and substance abusers or dependers had been excluded. Additionally, these patients had a rather low utilization of psychiatric/psychotherapeutic services before index treatment. Furthermore, the average inpatient treatment period at index admission was less than 2 weeks, which reflects the character of the inpatient treatment in terms of crisis intervention. Finally, drugs such as antidepressants were not needed for the acutely depressed patients.

On the other hand, these patients had not been psychiatrically inconspicuous: More than three fourths of the patients received a DSM-III diagnosis at index admission, most of them the diagnosis of a major depression. The whole group was considerably depressed at index admission and was still depressed at index discharge. A little less than 50% of the whole group were married at index admission, whereas in a comparable representative population sample of West-Germany about 80% were married [12]. Furthermore, in comparison with age- and sex-matched healthy control groups the patients were handicapped in fulfilling major social role areas such as partnership or work, and were dissatisfied with their lives.

At follow-up there was a conspicuous decrease in psychopathology and in cross-sectional DSM-III diagnoses as compared with index admission. Additionally, the patients functioned better in their main social role areas. Finally, the whole group showed a rather low utilization of in- and outpatient treatment and had an average earning disability in terms of months per year not significantly different from an age- and sex-matched healthy control group. However, even at follow-up 47% received a cross-sectional DSM-III diagnosis and had a considerable degree of psychopathology. Only 40% are married, and the patients are still dissatisfied with their main social roles.

The second result – a similar course and outcome of SA and NSA – was in opposition to our expectations.

No variable that had been assessed at index admission, index discharge, follow-up and during the follow-up period such as psychopathology, DSM-III diagnoses, social functioning, and length and type of treatment showed any significant difference between SA and NSA.

One reason for the similar course and outcome of SAs and NSAs with regard to psychopathology, DSM-III diagnoses, and social functioning could be a selection of mild suicide attempts in the SA group. However, 17% were rated as serious suicide attempters and 23% had attempted suicide at least once before. Our figures very much resemble the figures from a psychiatric liaison service attached to a medical emergency unit provided for parasuicides in Munich, with 14% of the patients having seriously endangered their lives by intoxication and with 27% having attempted suicide at least twice [22]. Additionally, the sociodemographic characteristics are comparable in both treatment facilities with a preponderance of females and of the mean age under 40 years, but with a lower unemployment rate of our patients. The help-seeking behaviour of the patients of Kurz et al. [22]

showed contacts to psychiatrists, psychotherapists, and general practitioners in 45% whereas in our sample only 25% utilized professional help before index admission. As Kurz et al. [22] did not exclude certain psychiatric diagnoses, the distribution of ICD-9 diagnoses is different from ours: 12% psychosis, 23% neurotic disorder, 11% personality disorder, 19% misuse or addiction, and 32% reactive disorder, 4% other diagnoses.

The basic social data and the suicidal behavior in our sample of patients present a pattern which has shown to be typical of suicide attempters in Munich as well as in other Western European cities [3, 14]. Furthermore, 70% of our SAs met the diagnosis of a major depression according to DSM-III criteria, which is a rate comparable to epidemiological [41] and clinical data [39], when more pronounced depressive syndromes are considered.

There was a surprisingly low rate of repeated suicide attempts during the follow-up period. Only two (7%) patients out of 28 SA at index admission attempted suicide once or more than once during the follow-up period and one (possibly two) (2%/4%) out of the 50 patients committed suicide. The reported expected suicide rate in an unselected parasuicidal sample is 1%–3% within 1 year after hospital admission [5, 22, 37]. The rate of repeated parasuicidal behavior lies between 12% and 25% within 1 year after hospital admission [2, 22, 29, 34].

Two explanations are conceivable for these discrepancies between our sample and the others: First, in our sample chronic depressions, drug and alcohol addiction/abuse were excluded; subjects with these normally have a high rate of suicides and repeated suicide attempts [1, 26]. Second, the Crisis Intervention Ward of the MPI-P, which is a rather rare facility for treatment of suicide attempters in Europe, [20] provides more effective help for suicide attempters than otherwise reported in the literature [19]. However, some arguments speak against this explanation: It seems unlikely that a 2-week treatment has an important impact on prevention of further suicidal behaviour for 4–6 years. Furthermore, only 61% utilized in- and/or outpatient psychiatric/psychotherapeutic treatment during the follow-up period. Additionally, so far the psychological treatment of suicidal behaviour has not been unambiguously proven successful [1, 19]. Finally, it also seems to be unlikely that the outpatient treatment in Munich is more successful than in other Western European cities.

Some treatment studies have demonstrated an improvement of the patient's social circumstances [6, 13, 15] and psychopathology [6, 11, 13] without altering the repeat rate of suicide attempts. These studies support our study in terms of the independent role of suicidal behaviour in relation to social circumstances and psychopathology.

Furthermore, our findings, as well as those of the above mentioned treatment studies, point to the importance of developing therapeutic strategies directly treating the "symptom" or "behaviour" of suicidality with psychological and/or pharmacological means. Recent approaches in behaviour therapy [23] and use of neuroleptics in pharmacotherapy [27] for so-called "suicide repeaters" have been promising.

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