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Inpatient psychosomatic treatment of anxiety disorders: Comorbidities, predictors, and outcomes

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ABSTRACT. Anxiety disorders pose a challenge for mental health care due to their high prevalence rates and chronic course. The purposes of this survey descriptive study are to explore prevalences and comorbidities of anxiety disorders in multimodal psychotherapeutic inpatient treatment and to determine treatment effectiveness and its predictors. In a total of 37.052 consecutive patients treated in 17 psychosomatic clinics, patients and therapists were queried independently before and after therapy. The main outcome measure was the reduction of the Global Severity Index (GSI) of the SCL-90-R, the secondary outcome was the standardized therapist rating of physical, mental and social impairment. Anxiety disorders were among the most frequent primary diagnoses affecting 5.022 (13.60%) of the patients. The majority suffered from at least one comorbid mental (80%) and somatic (61%) condition. The overall pre - post treatment effect size of the GSI was $d = .78$, ranging from $d = .71$ to $d = .88$. Effect sizes of therapist ratings were higher (.95-1.97). In a multivariate analysis, comorbid eating, anxiety and personality disorders were related to a poorer outcome (GSI), along with a long history of anxiety disorders and continued antidepressive medication. Due to the observational character of the study results should not be interpreted causally.

KEYWORDS. Psychosomatic inpatient therapy. Anxiety disorders. Comorbidity. Effectiveness. Survey descriptive study.

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RESUMEN. Debido a sus elevadas tasas de prevalencia y su transcurso crónico, los trastornos de ansiedad presentan un importante reto para la sanidad mental. Este estudio descriptivo por encuesta tiene como objetivo analizar las prevalencias y comorbilidades de los transtornos de ansiedad en el tratamiento psicoterapéutico multimodal de pacientes internados, y establecer la eficacia del tratamiento y sus predictores. Se evaluó por separado un total de 37.052 pacientes tratados en 17 clinicas psicosomáticas diferentes y sus terapeutas antes y después de la terapia. El principal resultado fue la reducción del Índice Global de Gravedad o Severidad (GSI) del SCL-90-R. Como medida secundaria se llevó a cabo la evaluación estandarizada del deterior físico, mental y social por los terapeutas. Los trastornos de ansiedad constituyeron uno de los diagnósticos primarios más frecuentes, afectando a 5.022 (13,60%) de los pacientes. La mayoría padecía al menos una condición comorbida mental (80%) y somática (61%). El tamaño del efecto global del GSI antes y después del tratamiento fue de d = 0.78, oscilando entre d = 0,71 y d = 0,88. Los tamaños del efecto en las evaluaciones de los terapeutas fueron mayores (0,95-1,97). En un análisis multivariado, trastornos alimentarios, trastornos de ansiedad y trastornos de personalidad fueron relacionados con un peor resultado (GSI), además de un largo historial de trastornos de ansiedad y una medicación continua con antidepresivos. Debido al carácter observacional del estudio los resultados no deben ser interpretados de modo causal.

PALABRAS CLAVE. Terapia psicosomática en pacientes internados. Trastornos de ansiedad. Comorbilidad. Efectividad. Estudio descriptivo por encuesta.

Anxiety and depressive disorders are the most frequent mental disorders in the general population. In a review of European epidemiological studies (Wittchen and Jacobi, 2005), the median 12-month prevalence of anxiety disorders was 13.50% (excluding OCD and PTSD), exceeding unipolar depression (6.90%). In the general population, specific phobias were most frequent (6.40%), followed by social phobia (2.30%), panic disorder (1.80%), generalized anxiety disorder (1.70%) and agoraphobia (1.30%). The prevalence of anxiety disorders was even considerably higher in primary medical care. In a study by Kroenke, Spitzler, Williams, Monohan, and Löwe (2007), 19.50% of 965 consecutive patients from general practice suffered from any anxiety disorder. A total of 8.60% patients suffered from posttraumatic stress disorder, 7.60% from generalized anxiety disorder; 6.80% had panic and 6.20% social anxiety disorders. Compared to patients without this diagnosis, patients suffering from an anxiety disorder were more frequently work disabled and had attended physicians more frequently. As in previous studies (Wittchen and Jacobi, 2005), anxiety disorders were still under-diagnosed and under-treated, *e.g.* 41% had not received treatment for their anxiety disorder (Kroenke *et al.,* 2007). Due to their strong propensity to a chronic course and a reduced quality of life and social handicaps, anxiety disorders pose a challenge for mental health care (Wittchen and Jacobi, 2005). Children and adolescents already show high rates of anxiety, with separation anxiety most relevant in children, and social anxiety, respectively generalized social anxiety, being most relevant in adolescents and young adults (Cunha, Soares, and Pinto-Gouveia, 2008; Vigil-Colet *et al.,* 2009; Zubeidat, Fernández-Parra, Sierra, and Salinas, 2007).

Recent studies of anxiety disorders have shown that comorbidity is the rule rather than the exception. Usually, comorbidity was studied among anxiety disorders and between anxiety and depressive disorders (van Balkom *et al.,* 2008). Comorbidities with other, *e.g.* somatoform disorders were studied less frequently (Mergl *et al.,* 2007). A recent German study of a random sample of primary care patients found that a total of 15.80% suffered from an anxiety disorder, whereas 25.60% suffered from a somatoform disorder, and 22.90 were diagnosed as a depressive disorder. However, only 3.80% of all patients suffered from an anxiety disorder only, 2.30% had a comorbid somatoform disorder, 3.60% a depressive disorder, and 6.10% had two comorbid disorders (depression and somatoform) in addition to their anxiety disorder. Work disability and health care utilization was further increased in those patients with an additional comorbid anxiety disorders (Mergl *et al.,* 2007).

In order to provide effective treatments for patients with complex psychosomatic disorders and with somatic and psychiatric comorbidity, a total of 3000 beds and day hospital facilities have been established in acute medical hospitals and another 15000 beds in rehabilitation clinics in Germany providing integrated medical and psychotherapeutic services. Clearly, while models of integrated care by inpatient and day hospital units are also provided in the Netherlands, Switzerland, Austria or in special clinics in the US, the provision of integrated psychosomatic treatment units for the population is unique in Germany (Wulsin, Sollner, and Pincus, 2006). Inpatient treatment is only indicated when outpatient treatment proves unsuccessful or insufficient due to the severity, acuity and complexity of the disease or a necessity for a multimodal and intensive treatment. An increasing number of follow-up studies have documented the overall effectiveness of psychodynamic and behavioural inpatient treatments in mixed samples of mental and psychosomatic disorders in Germany. In a review on nine studies including over 2,700 inpatients from psychosomatic-psychotherapy units, Franz *et al.* (2002) presented evidence of considerable clinical improvement of 2/3 to 3/4 of heterogeneous patient samples on various measures after inpatient treatments ranging from an average of 42 to 97 days. In their own survey of three clinics the authors found a large mean effect size pre to post inpatient psychotherapy of .84 on the GSI (range of .52 to 1.11) – based on an average treatment duration of 127 days. Improvements were quite stable in 1-year and 3-year follow-up studies (Schaefer *et al.,* 2008). Studies measuring health care utilisation and work loss days before and after inpatient psychotherapy also documented considerable savings of direct and indirect especially (esp. word disability days) health costs from the year pre- to the year post-treatment. Based on health insurance data, Zielke (1999) even calculated a cost-offset ratio of 1: 2.49 in favour of treatment.

Overall, efforts to identify predictors of outcome of inpatient treatments have been only of limited success. In the studies quoted above, duration of treatment and outcome were unrelated. This may not be surprising as treatment is usually continued as long as a patient does not progress sufficiently well. In a recent survey over 17,860 patients from 17 hospitals (Heymann, Zaudig and Tritt, 2003), treatment duration was associated with the presence of a personality disorder, higher comorbidity, a chronic course of disease and multiple previous ambulatory treatments. Some studies (*e.g.* Oster, Müller,

and Wietersheim, 2009) identified a long duration of sick-leave from work as a negative predictor. Other investigations found measures of comorbidity or of personality (*e.g.* social avoidance, alexithymia), predictive of specific outcome measures (Dinger and Schauenburg, 2010; Grabe *et al.,* 2008; Haase *et al.,* 2008; Schaefer *et al.,* 2008); due to the heterogeneity of measures these studies are hard to compare.

A large number of ambulatory treatment studies have demonstrated favourable effects on patients with specific anxiety disorders (Leichsenring *et al.,* 2009; Milrod *et al.,* 2007; Peñate, Pitti, Bethencourt, de la Fuente, and Gracia, 2008; Sánchez-Meca, Rosa, Marín-Martínez, and Gómez-Conesa, 2010). To our knowledge, no studies have determined the effectiveness of inpatient treatment of anxiety disorders. Based on a large sample of patients and psychosomatic clinics, the purpose of this survey descriptive study (Montero and León, 2007; Ramos-Avarez, Moreno-Fenández, Valdés-Conroy y Catena, 2008) is to determine: a) How effective is inpatient treatment of anxiety disorders? b) What are the determinants of treatment outcome?

Given the patients' high propensity to seek medical and psychotherapeutic treatment (Kessler *et al.,* 2006), anxiety (*e.g.* panic) disorders were expected to constitute a considerable proportion of psychosomatic inpatients. As severity and complexity of the current disorder are considered in the medical indication for inpatient psychotherapy, we further anticipated considerable psychiatric and somatic comorbidity in this patient group.

Method

Participants

Since 2001, a total of 17 psychosomatic clinics in Bavaria have agreed to use the same documentation system for their patients; data analysis was conducted in the Institute for Quality Assurance in Psychotherapy and Psychosomatic Medicine, Munich (IQP). The great majority of consecutive patients (rate of non-response: 15%) filled out standardized questionnaires and demographic data at intake and discharge, while diagnoses (International Classification of Diseases, ICD-10) and the Impairment-Scores (IS: Schepank, 1987) were coded independently from patients' self-ratings by the therapists. In order to insure reliability, therapists were trained in coding ICD-10 and IS. Patients were admitted only when ambulatory treatment was not considered sufficient, as judged by severity of disorder or dysfunction, disruption of their social support, or failure of an ongoing psychotherapy. Treatments of behavioural or psychodynamic orientation were multimodal and resource-oriented including individual, group and creative treatments (*e.g.* art and body-centered therapy, relaxation); psychotropic medication was applied when necessary. From January 2001 to December 2008, data of 37052 patients were recorded in the file. A total of 5022 patients received a primary diagnosis of anxiety, 13.55% of the total sample. Table 1 shows the characteristics of patients with the primary diagnosis of an anxiety disorder (n = 5022).

The mean age was 40 years (SD = 12; range from 15 to 84 years). More than two thirds were female; more than half of the sample was married or had a steady relationship (62.40%). More sample characteristics are reported in Table 1.

TABLE 1. Characteristics of anxiety disorder patients (primary diagnosis).

Variable	*%*	*M*	*SD*	*n*
Age (years)		39.93	12.18	5022
Sex (female)	69.20			3477
Partnership				
Married or partnership	62.40			3133
Single	33.20			1668
Unknown	4.40			221
School				
Still in school, no degree, special school	4.10			205
Below O-level	33			1659
O-level	29.90			1502
A-level	28			1406
Other / unknown	5			250
Employment full- or halftime (yes)	49.80			2501
Physical comorbidity (yes)	61.60			3093
Ten weeks or longer on sick-leave (yes)	36.90			1852
Duration of disorder (years)		5.36	7.49	4828
Duration of treatment (days)		48.81	25.72	5022
GSI pre treatment (score)		1.31	.68	4284
GSI post treatment (score)		.78	.62	3903

Measures and instruments

Definition of primary diagnoses and comorbidity. Anxiety disorders were coded according to ICD-10: agoraphobia without (F40.00) and with panic disorder (F40.01), social phobia (F40.1), panic disorder (F41.0), generalized anxiety disorder (F41.1), posttraumatic stress disorder (F43.1), specific phobias (F40.2), and other anxiety disorders (mixed anxiety and depressive disorder (F41.2) and other mixed anxiety disorders (F41.3) as well as other (F41.8) and unspecified anxiety disorders (F41.9). The majority of patients in this combined group were coded F41.2 (n = 717; 14.30%). Up to 10 mental ICD-10 diagnoses were coded per patient in the file. In order to assess mental comorbidity, the 2nd to 10th diagnoses were grouped into the following categories: No second diagnosis, depression (F32.xx – F38.xx, F43.2), somatoform (F45.xx), eating disorder (F50.xx), personality disorder (F60.xx – F62.xx), substance abuse (F10.xx – F19xx), anxiety disorders (F40.xx - F41.xx, F43.1), any other diagnosis. Also anxiety was diagnosed as comorbidity if a second diagnosis was given. Physical comorbidity was categorized as «yes» vs. «no». If missing, it was assumed that the physician might have left the field open when no comorbitity was present; hence, missing values were recoded as no physical comorbidity.

Psychosocial measures. Patient assessments were conducted by validated and standardised self- report inventories at intake and at discharge. The Symptom Checklist (SCL-90-R (Franke, 2002) requires patients to rate 90 items (*e.g.,* «feeling inferior to others») according to the question, «How much were you bothered during the past seven days, including today?» on a 5-point scale, from 0 (*not at all*) to 4 (*extremely*). Nine subscales assess specific mental symptoms; the Global Severity Index (GSI) is calculated as the mean score of all items.

Sociodemographics and previous treatments. Based on the standardised German documentation for psychosomatic treatment PsyBado (Heuft and Senf, 1998), additional questions at intake covered sociodemographic variables and previous treatments. Therapists filled out the corresponding medical documentation at intake and discharge including ICD-10 diagnoses, the duration of the primary diagnosis and the Impairment Score (IS: Schepank, 1987). The IS is a standardized score discriminating 3 dimensions of distress: psychological, physical and social and a sum score of total distress on a scale from 0 (*not at all*) to 4 (*extremely*). At discharge, medication (neuroleptics, antidepressants, tranquillizers, analgesics, heart medication) was documented as «not prescribed», «newly prescribed», «continued», «dose reduced», «discontinued», «temporarily prescribed», «dose increased» and «change of drug».

Procedure

In a preliminary analysis, it was checked if the eight subgroups of patients with a certain primary diagnosis of anxiety disorder were big enough to be analysed separately (Figure 1). Due to relatively small sample sizes in two subgroups, first F40.00 and F40.01 were combined into one subgroup labelled agoraphobia; second, specific phobias (F40.2) were subsumed under «other anxiety disorders». Hence, for analyses of variance and regression analysis only six groups were distinguished, comprising cell number of $n \geq 95$. The main outcome variable was the GSI of the SCL-90-R (Franke, 2002). Multiple regression analyses of outcome included psychiatric comorbidities, demographic variables, logarithms of duration of illness and treatment and medication as predictors. In coding drug intake for the regression analysis, four categories were formed for each drug: «Not administered», «newly prescribed», «continued» (including dose increased and reduced) and «discontinued».

Multivariate analyses were restricted to cases with valid GSI scores before and after treatment. The rate of missing data on the GSI data was 25.80% on average, strongly varying among the subgroups ($X^2_{(5)} = 64.91$, $p < .001$). The highest rate of missing data was observed in PTSD (32.60%), the lowest in agoraphobia (17.50%). The amount of missing data in the other subgroups ranged between 21.10% and 26.70%. Significance level was set to $p < .01$ in all tests (two-tailed) due to the large sample size, but no Bonferroni-corrections were performed to avoid different significance levels for various tests. Effect sizes (d) were calculated according to Cohen (1988) as the difference between pre and post measure divided by the standard deviation of the pre measure.

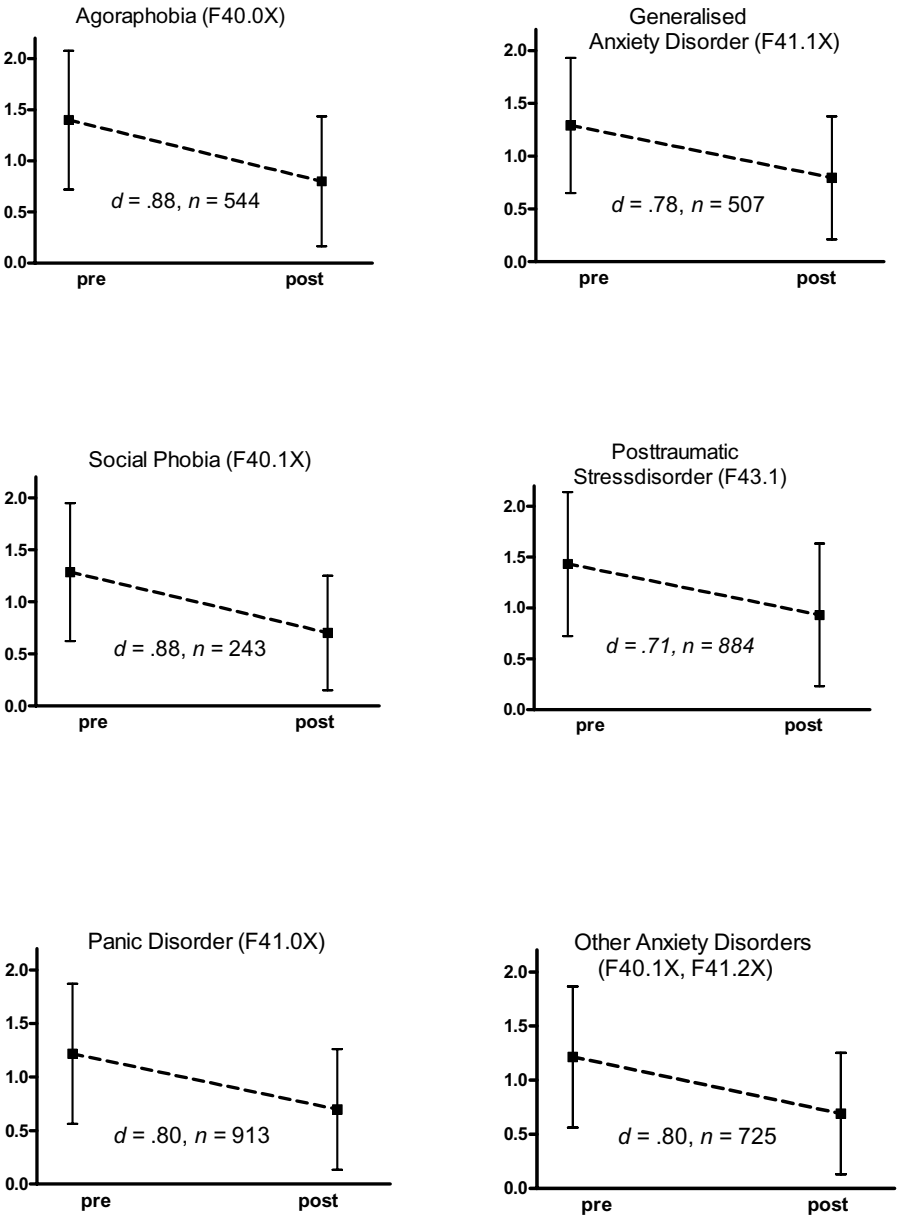
Results

Posttraumatic stress disorder (26.10%, $n = 1311$) was the largest subgroup followed by panic disorder (23.60 %, $n = 1185$), other anxiety disorder (15.50%, $n = 778$), generalized anxiety disorder (13.70%, $n = 690$), agoraphobia without panic (11.70%, $n = 587$), social phobia (6.10%, $n = 308$), agoraphobia with panic (1.60%, $n = 82$) and specific phobia (1.60%, $n = 81$).

The mean number of mental comorbid diagnoses was 1.50 ($SD = 1.19$). The most frequent comorbid condition was depression with 47.40%, followed by personality

disorder (20.10%), somatoform disorder (17.80%), substance abuse (15.10%), eating disorder (12.30%), other anxiety disorder (9.80%). Only 9.70% had no comorbid condition, 17.10% were classified as «other» comorbid mental condition. Most of the patients had been treated before: A total of 2136 patients received more than 26 hours of therapy, 1166 reported to have had between 6 – 15 hours, 688 patients had less than six hours, and only 877 patients no ambulatory treatment at all. Data for 155 were missing or coded incorrectly. Ambulant psychotherapy before the treatment here was reported by 51% (2493/4877) of the patients, with significant differences among the subgroups ($\chi^2_{(5, n=4877)} = 31.19$, $p < .001$). The highest rate of ambulatory psychotherapy was reported by patients having PTSD (57%), the lowest in those having agoraphobia (45%). Stationary therapy was reported by 39% (1904/4822) of the patients, psychiatric stationary therapy by 22% (1041/4772).

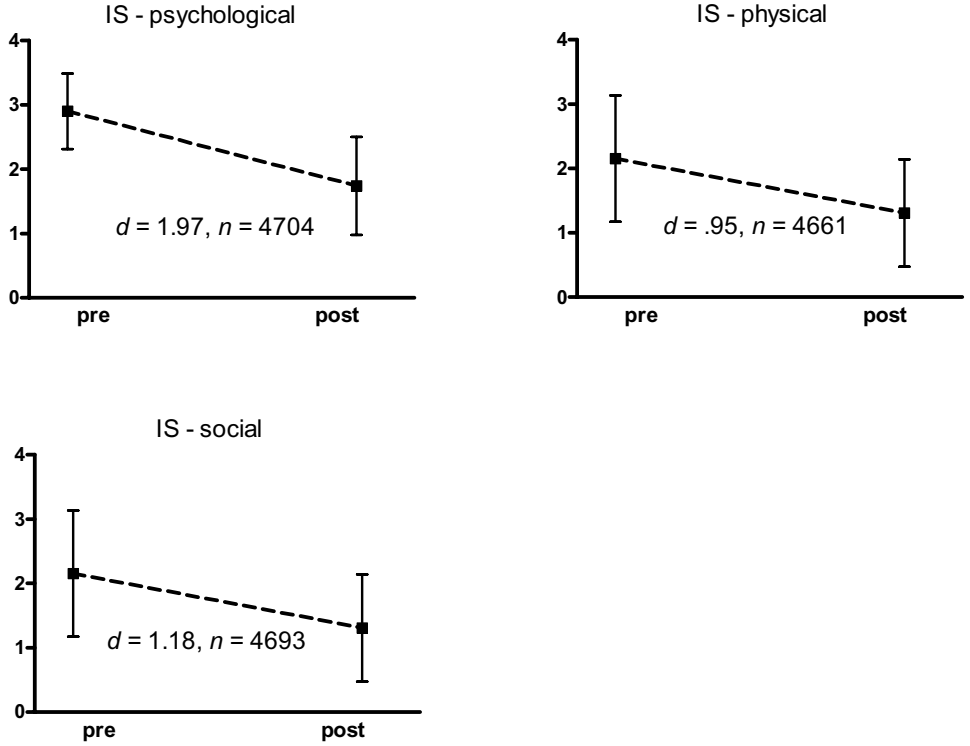
The results of the ANOVA's comparing the GSI across the six subgroups of anxiety disorders are displayed in figure 1. On the global severity index (GSI), a main effect for time was found, indicating a highly significant decrease in all six subgroups – $F_{(1, 3811)} = 2603$, $p < .001$. In addition, a group effect reached significance, indicating significant differences in the symptom levels between the subgroups. Patients with agoraphobia and posttraumatic stress disorder displayed higher levels than the other four subgroups – pre as well as post treatment – $F_{(5, 3811)} = 19.70$, $p < .001$. The interaction between diagnostic group and time slightly missed the significance level – $F_{(5, 3805)} = 2.66$, $p = .021$; the same was true for physical comorbidity – $F_{(1, 3805)} = 4.56$, $p = .033$. Treatment effect sizes (intake-discharge) were high, particularly for social phobia (.88), agoraphobia (.88), panic disorder (.80) and other anxiety disorders (.80). Slightly below the criterion for a strong effect was generalized anxiety (.78), and PTSD was lowest (.71).



Note. *F*-values for the main effect diagnostic group $F_{(5, 3811)} = 19.70$, $p > .001$; main effect pre-post $F_{(1, 3811)} = 2603$, $p > .001$; interaction $F_{(1, 3811)} = 2.66$, $p > .021$, Total $N = 3817$.

FIGURE 1. Pre-post effects for subgroups of anxiety disorders: Means and standard deviations of Global Severity Index scores (SCL-90R).

The results of the ANOVA's comparing three measures of the IS, *i.e.* therapist ratings psychological, physical and social impairment in the six subgroups of anxiety disorders revealed one significant interaction effect: the reduction of physical impairment differed slightly between the diagnostic subgroups – $F_{(5, 4649)} = 3.11$, $p < .008$. Agoraphobic and social anxiety disorders reached effect sizes of about .90, while the effect sizes in all other subgroups were higher (up to 1.02). On the other scales, no different courses for diagnostic subgroups could be observed. Mean effect sizes for the Impairment Score were $d = 1.97$ for the psychological score, $d = 1.18$ for the social score and $d = .95$ for the physical score (Figure 2).



Note. *F*-values for the main effect pre-post: psychological $F_{(1, 4697)} = 179.80$ $p > .001$; physical $F_{(1, 4654)} = 98.29$, $p > .001$; social $F_{(1, 4686)} = 76.76$, $p > .001$

FIGURE 2. Pre-post effects for the impairment-score: Means and standard deviations of psychological, physical and social impairment as rated by the therapists.

Table 2 gives an overview of the medication administered during inpatient care. Antidepressants were the mostly prescribed drugs in this sample, continuously prescribed in about 30 % of the patients (*i.e.* combining the categories «continued», «dose reduced»,

«dose increased» and «change of drug»). Characteristics for other drug groups are reported in Table 2.

TABLE 2. Medication during stationary treatment (%).

Drug	*Not prescribed*	*Newly prescribed*	*Continued*	*Dose reduced*	*Discontinued*	*Temporarily prescribed*	*Dose increased*	*Change of drug*
Neuroleptics	84.60	4.30	3	.80	1.90	4.90	.40	.10
Antidepressants	50.50	9.20	19.90	4.80	9.70	2.30	2.10	1.60
Tranquilizer	75.20	1.80	3.40	2.10	5.90	11.30	.20	.20
Analgesics	74.50	1.40	3.40	.70	.80	18.10	1	.10
Heart medications	88.40	1.30	8.10	.40	.80	.50	.40	.10

Note. Due to missing data, sample size varies between 4710 £ *n* £ 4772.

The regression analysis of the predictors on the GSI as the criterion was performed on about 3703 of the 5022 patients (74 % of the sample). The remaining 26% had at least one missing value, mostly the post-treatment GSI score. A total of 24 terms were tested, including the pre treatment GSI score. Comorbid eating, personality or anxiety disorders were associated with poorer outcomes (Table 3, all p's < .001). A longer history of the anxiety disorder also was associated with poorer outcome (p < .001). Continued prescription of antidepressants was significantly associated with a poorer outcome. There were trends toward a poorer outcome for physical comorbidity, male sex, newly prescribed antidepressants and continued treatments with tranquillizers. Duration of treatment or other demographic variables (Table 1) were not associated significantly with the outcome.

TABLE 3. Predictors of treatment response (Change in Global Severity Index).

Variable	β	$se_{(\beta)}$	p
Global Severity Index (GSI) pre treatment	.505	.013	<.001
Psychiatric Comorbidity			
Depressive disorder	-.017	.017	.294
Somatoform	.037	.022	.088
Eating disorder	.111	.026	< .001
Personality disorder	.112	.021	< .001
Substance abuse	-.026	.023	.267
Anxiety disorder	.103	.029	< .001
Other	.026	.022	.241
Physical Comorbidity	.025	.017	.043
Duration of disorder (log)	.027	.006	< .001
Duration of treatment (log)	-.002	.018	.908
Age	-.001	.001	.106
Sex	.035	.018	.051
Profession (academic)	-.021	.028	.449
School (A-level)	.000	.023	.993

TABLE 3. Predictors of treatment response (Change in Global Severity Index) (*Cont.*).

Variable	β	$se_{(\beta)}$	*p*
Antidepressants			
Newly prescribed	.071	.029	.015
Continued	.120	.020	< .001
Discontinued	-.025	.027	.343
Discontinued	-.023	.033	.491
Heart medications			
Newly prescribed	-.034	.073	.635
Continued	-.049	.030	.101
Discontinued	.019	.086	.981
Constant	-.135	.076	

Note. Unstandardized *b's (*Snedecor and Cochrane, 1967), since the GSI captures complaints, negative value for *b* indicates a lower GSI score after therapy, *i.e.* better treatment success.

Discussion

Anxiety disorders are among the most frequent mental disorders in the general population in Europe with an average 12-month-prevalence of 13.50% and more. Similar or even higher point prevalences were found repeatedly in primary care (16% to 20%), even when simple phobias were not taken into account, which represent the most frequent disorders in the general population. Despite their high prevalence and health care utilization, detection and treatment of anxiety disorders in primary medical care are frequently delayed (Kessler *et al.*, 2006; Kroenke *et al.*, 2007). Vegetative (*e.g.* increased heart rate, palpitations, sweating), thoracic (dyspnea, chest pain), abdominal (*e.g.* nausea) and more general symptoms of arousal are frequently mistaken for signs of somatic disease. Extended or repeated medical examinations have the potential to promote patients' somatic attributions. While comorbidity is the rule rather than the exception (Mergl *et al.*, 2007; van Balkom *et al.*, 2008), its impact on the often chronic course of disease upon treatment outcome has not been determined conclusively.

As we had expected, based on their overall high help-seeking behaviour (Kessler *et al.,* 2006), anxiety disorders also constituted one of the major primary diagnoses in 13.60% of all inpatients. The predominance of PTSD, panic and generalized anxiety disorders correspond to the proportion of presentation in general practice (Kroenke, 2007). Recent surveys contrasting patient self-report and clinical diagnoses make it seem likely that social phobia is under-diagnosed in inpatient samples (Wiltink *et al.*, 2010). Specific phobias as the most frequent conditions in the general population are less likely to induce medical help-seeking or inpatient treatment as a primary diagnosis.

Also in accordance with our expectations was the fact that mental comorbidity was high pertaining to 80% of this group. The majority (60%) was also diagnosed with an additional somatic disorder, but there was only a slight trend for a poorer outcome of physical comorbidity in the multiple regression analysis (which was not reflected in treatment duration).

Treatment effect sizes on the GSI (intake - discharge) were high, particularly for social phobia, agoraphobia, panic disorder and other anxiety disorders. Slightly below the criterion for a strong effect was generalized anxiety disorder. PTSD was lowest, even though it required the longest mean treatments of 8.3 weeks compared to other anxiety disorders (6 weeks). The differences of treatment effects between the various subgroups of specific anxiety disorders are marginally significant. Even though the duration of treatment has declined, overall effect sizes corresponded to previous reports of inpatient treatments of mixed patient groups (Franz *et al.,* 2002). Treatment effect sizes of the therapist rating were considerably higher than based on patient self-report (GSI). It should be noted, however, that there was no check for reliability of the therapist ratings. Therapeutically, with anxiety disorder patients, psychological distress can be considered the primary target of treatment, more prominent than physical impairment; profound changes of social impairment are more likely to be expected following discharge from the hospital.

As defined by German treatment standards (Deutsches Institut für Medizinische Dokumentation und Informatik, 2000; Schaefer *et al.,* 2008; Wulsin *et al.,* 2006), multimodal psychosomatic inpatient treatment is centered on behavioural or psychodynamic individual and group psychotherapy, integrating body-oriented and creative psychotherapy and various adjunct treatments (*e.g.* relaxation, patient education, therapeutic community). Pharmacological treatment is administered on an individual basis when deemed necessary. Consistent with current medical guidelines (www.nice.org.uk), antidepressants were the mostly prescribed drugs in this sample, continuously prescribed in about 30% of the patients (*i.e.* combining the categories continued medication, dose reduced, dose increased and change of drug). Tranquilizers and analgesics were mostly prescribed temporarily - in 11% and 18% of the patients. Neuroleptics and heart medications did not play an important role in the treatment of anxiety disorders.

The regression analysis of the predictors on the GSI yielded the following predictors: Comorbidity had an adverse effect on outcome, but this applied only to eating disorders, personality and additional anxiety disorders, as a trend also to somatoform disorders. These comorbidities may impair functioning and therapeutic progress. Unlike the study by van Balkom *et al.* (2008), depressive comorbidity was not a significant predictor of outcome. Physical comorbidity and male gender only played a marginal role as negative predictors. A long duration of the anxiety disorder before treatment also was associated with poorer outcome. The same result has been extensively discussed in schizophrenia (Perkins, Gu, Boteva, and Lieberman, 2005), but has found less attention yet in anxiety disorders (Dell'Osso and Altamura, 2010). The present results support the view, that chronicity is a negative predictor for treatment success in milder mental disorders, too. Given the naturalistic design of the study, negative associations between psychopharmacological treatments and outcome cannot be taken as indicative for their effectiveness. It can be rather surmised that an antidepressive treatment is continued, changed or newly prescribed in patients not responding to psychotherapeutic treatment. The rare, continued treatment by tranquillizers could be seen as an attempt to ameliorate symptoms in order to gain therapeutic access to severely anxious patients.

Conclusion

This is the first large scale study of inpatient psychosomatic-psychotherapeutic treatment of anxiety disorders. Limitations of the study reside in the use of unspecific outcome criteria (distress), which is likely to lead to reduced effect sizes. There was a high proportion of anxiety disorders in psychosomatic inpatient treatment with a high mental and somatic comorbidity. Inpatient treatment proved effective for all anxiety disorders, especially for social phobia and agoraphobia, slightly less for PTSD. However, we have no follow-up data on the stability of effects. Comorbidity with personality disorders, eating disorders and other anxiety disorders were among the negative outcome predictors. Along with multimodal psychotherapeutic inpatient treatment, antidepressive treatment was administered in 30% of the patients, particularly in those who did not respond sufficiently to treatment. Compared to a new prescription or dose increase of 2%, tranquillizers were more frequently discontinued or reduced (8%). One of the major problems in the treatment of anxiety disorders pertains to their tendency to take a chronic course (Kessler *et al.*, 2006).

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