von Wietersheim J, Malewski P, Jäger B, Köpp W, Gitzinger I, Köhler P, Grabhorn R, Kächele H, TR-EAT (2004): The German multi-center eating study on the influence of psychodynamic psychotherapy on personality. *In: Richardson P, Kächele H, Renlund C (Eds): Research on Pschoanalytic Psychotherapy with Adults. Karnac, London, p 1-13*

The German multi-center eating study on the influence of psychodynamic psychotherapy on personality

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Funded by The Ministry of Education and Research (BmBF, FKZ01EN9410)

The Influence of psychodynamic psychotherapy on personality traits of Anorexia nervosa and Bulimia nervosa in-patients – results of the German multi--centre eating disorder study (TR-EAT)

Objectives: What are the effects of a psychodynamic in-patient treatment of patients with anorexia nervosa and bulimia nervosa on personality data? In how many patients can a successful change in the personality domain be observed?

Methods: 732 patients were assessed at the beginning and the end of an in-patient treatment as well as 2½ years after this treatment. Data were collected by means of the personality inventories „Freiburger Persönlichkeitsinventar (FPI-R)“ and „Narzissmusinventar“. A definition of success was constructed using the clinical significance concept. This is related to the scales life satisfaction, inhibition (FPI-R), powerless self and negative body self (Narzissmusinventar).

Results: The results of both questionnaires reflect clinically well-known psychopathological characteristics of eating disorder patients. During in-patient treatment and also afterwards, there were improvements in personality data, but not to the level obtained from a healthy control group. One third of the patients showed remarkable improvements in the outcome measure. The success in the personality field is positively correlated to the success in the eating disorder symptoms. This success could not be predicted by initial data or by therapy data.

Conclusions: There are marked impairments of the patients in the personality data. Changes in this domain take time and are rather small.

Introduction

The eating disorders anorexia nervosa, bulimia nervosa and the corresponding double diagnoses in the diagnosis schemes DSM III-R, DSM IV as well as ICD-10 are predominantly defined by symptoms. Additionally, numerous publications (e.g. Feiereis, 1989, Senf, 1989, Janssen et al., 1997, Herzog et al., 1995) but also clinical experience have demonstrated that these patients show significant instabilities and disorders with respect to personality traits. Many patients have been reported to suffer from depressive moods, anxieties, low self-esteem, tendencies to social isolation, and, particularly for anorectic patients, compulsive behaviour. As a result, treatments (psychodynamic psychotherapies in particular) seek to tackle these personality characteristics. Treatment of current conflicts as well as strengthening of the resources of individual patients are important goals, besides reducing the symptoms. Consequently, we designed a study, which assessed success not only in terms of symptoms, but also in terms of personality and interpersonal relations (Kächele, 1999, Kächele 2000). This report focuses on the measurement of success with respect to personality traits. Personality questionnaires are commonly used to record personality traits and characteristics. High scores on depression, social isolation, enhanced psychopathology, inhibition, powerless self-esteem and reduced life satisfaction have been reported in previous studies on eating disorders, using different questionnaires (Böhle et al. 1991, Schork et al. 1994, Jäger et al. 1996, Hurt et al. 1997, Dancyger et al. 1997, Thiel et al. 1999). Anorectic patients (purging type) show higher psychopathology than restrictive type patients (Hurt et al., 1997). Dancyger et al. (1994) describe marked changes of the psychopathology during an in-patient treatment and fewer changes during the follow-up period of 10 years.

This multi- centre eating disorder study (Project TR-EAT) emerged from a combined research effort of various specialised hospitals and university hospitals. The goal of the study was to investigate the courses of anorexia nervosa and bulimia nervosa patients. The focal point of the research was to find out whether or not different periods of in-patient treatment affect the therapy outcome after 2 ½ years. Further interest was related to the prognosis of these

diseases and the possibility of prediction of success at the follow-up evaluation. Numerous symptomatic, but also personality-diagnostic and social variables have been recorded by questionnaire and interview at the beginning and at the end of an in-patient treatment, and also at the follow-up examination 2½ years after beginning of the treatment. 45 clinics participated in this study and 1247 female patients were assessed in total. As a main result it emerged that 36 % of the anorexia-patients and likewise 36 % of the bulimia-patients were largely free of symptoms at the follow-up assessment. The duration (between 6 weeks and up to more than 3 month) and intensity (number of psychotherapy sessions) of the in-patient treatment varied greatly. However, these variations did not influence the outcome after 2 ½ years. More then 80 % of the patients continued psychotherapy after the in-patient treatment, mostly as outpatients, but sometimes as in-patients in another hospital.

However, a distinction must be made between research into personality traits and studies dealing with personality disorders of patients with eating disorders. Personality disorders are well defined (e.g. according to DSM-IV or ICD-10) diagnoses, which can be drawn in addition to an existing eating disorder and describe a heavy psychopathology. Accordingly, the co-morbidity of anorexia and personality disorders has been estimated to be up to approximately 50 % (Rosenvinge and Mouland, 1990). Estimations with bulimic patients with additional personality disorders range at ca. 20 % (Herzog et al., 1995). For the assessment of treatment success the use of a personality disorder comorbidity is likely to be less sensitive than the standardized assessment of personality traits.

2. Method

This work is a partial evaluation carried out in the context of the multi- centre eating disorder study (Kächele *et al.*, 2000, Kächele *et al.*, 1999). Only the methodological aspects relevant for this evaluation are considered here.

The instruments used for personality data collection were the *Freiburger Persönlichkeitsinventar (FPI-R)* (Fahrenberg *et al.,* 1989) and the *Narzissmusinventar* (*Narcism-inventory,* Denecke and Hilgenstock, 1989). The FPI-R was set as the German standard assessment instrument for personality data. Since problems of the narcissistic regulatory system are commonly associated with eating disorder patients, the *narcissism inventory* has also been used. For economical reasons, however, a third of the scales have been discarded, as no deviation from a 'healthy' control group could be found in previous studies. The internal consistency (Cronbach's-Alpha) of the narcissism inventory scales lies between 0.71 and 0.94. Overlap with the FPI-R is only marginal.

Data on personality were recorded at the beginning and the end of an in-patient treatment, which on average lasted approximately 3 months, as well as at the time of the follow-up evaluation 2½ years after admission into the in-patient treatment.

Four levels of symptomatic success were defined according to the DSM III-R-diagnostic criteria. The components used in each case were the main symptom, i.e. for anorexia nervosa being underweight (15 % below the expected weight), for bulimia binging (at least twice per week), as well as other symptoms such as body image distortion, fear of fatness, and weight reduction strategies. Success assessment was scaled as follows: 0 refers to the assessment „all relevant symptoms are pathological", 1 „one symptom in the healthy range", 2 „the main symptom (weight or binges, respectively) and one additional symptom in the healthy range", 3 „all symptoms in the healthy range".

It is very problematic and doubtful to define a single criterion for success for the personality field. Based on experience with these instruments, a criterion has been developed, which contained four scales that were considered necessary. Those were from the FPI-R scales for life satisfaction and self-consciousness and from the narcissism inventory the scales for powerless self and negative body-self. These scales were selected as they reflect important aspects of specific problems of patients with eating disorders on one hand, and on the

other hand cover different content areas. A further consideration regarding the definition of success was that the main goal of therapy should be to improve pathological (deviating from the normal range) values in the relevant scales, and to reach norm-values if possible. Hence, if a value falls outside the normal range before but inside after treatment, this should be considered a success (corresponding to one point in the success criterion). If a value improves clinically significantly, but still lies outside the normal range (e.g. improvement of Stanine values from 1 to 3), it should be considered a partial success (half point). Here, a definition of a clinically significant change, which is related to the reliability of an instrument (questionnaire), has been used (Jacobson and Truax, 1991). Consequently, a criterion to measure success has been developed, which considered both, absolute changes (outside before treatment and inside after) and relative changes (strongly pathological before treatment, clinically significantly less pathological after). If a value has been in the normal range right from the start, the therapy was judged successful concerning the respective scale (this could lead to an over estimation of the effectiveness of therapy, but this rarely occurred). The success points were added up and a metric standard for success was constructed with them. The value 6 equalled maximum success reflecting maximum changes, the value 0 corresponds to no changes in personality values, and negative values (to a maximum of –2) indicated deterioration.

All patients were admitted to one of 45 psychodynamically orientated psychotherapeutic hospitals in Germany between September 1993 and October 1995. The 2-½ years follow-up assessment was conducted by the end of 1998. Inclusion criteria were DSM III-R-diagnosis for anorexia nervosa, Bulimia nervosa and double-diagnosis (both anorexia- and bulimia criteria fulfilled) as well as an age of ≥18 years. 1247 mostly female patients participated in this study, however, the sample size decreased owing to data inconsistencies to 1171 participants.

The following description of the samples is for the 732 patients who participated in the follow up. 712 patients were female, 20 were male; 405 were bulimic, 229 anorectic, and 98 cases were double-diagnoses. The average age of anorectic

patients was 24.9 (SD = 6,0) years, for bulimic patients 25,9 (SD = 6,3), and for patients with double-diagnosis 25.4 years (SD = 5,7). The average duration of illness for anorectic patients was 5.8 years (SD = 5,4), for bulimic patients 8.2 years (SD = 6,2), and for patients with double-diagnosis 6,7 years (SD = 5,5). The average duration of in-patient treatment was 12.2 weeks (SD = 7,7).

As yet, there are no normative data available for the narcissism inventory. Thus, data from a control group, consisting of 120 female medical students, have been used[1].

3. Results

3.1 Freiburger personality inventory

Table 1 depicts the FPI-R-stanine values for the anorexia- and bulimia group. Many scales show changes in the means, which numerically (and probably also clinically) are rather small. Particularly obvious are very low life satisfaction, high inhibition, high arousal, and high emotionality (Neuroticism). Changes of the means in the desired direction became apparent in the previously defined scales for success measurement. Also, many of the patients show clinically deviating personality characteristics (stanine values < 4 and > 6 respectively). Changes take place in the period from admission to discharge as well as from discharge to the date of follow-up evaluation. Patients with double-diagnosis, which, owing to lack of space, are not included in Table 1, displayed particularly low values for “life-satisfaction” but also particularly high values for “strain” and ”emotionality“. These patients seem to have a higher psychopathology.

Table 1: FPI-scales (Stanine) for „admission“, „release“ and „follow-up“.

FPI	**Anorexia**			**Bulimia**		
	Admission	**Discharge**	**Follow-up**	**Admission**	**Discharge**	**Follow-up**
Life satisfaction	2.7 ±1.4	3.1 ±1.6	3.5 ±1.8	2.7 ±1.2	3.1 ±1.4	3.6 ±1.8
Social orientation	5.9 ±1.8	5.5 ±1.7	5.1 ±1.8	5.6 ±1.8	5.1 ±1.9	5 ±1.8
Efficiency orientation	4.8 ±1.9	5.2 ±1.9	5.1 ±1.9	4.5 ±1.9	4.9 ±1.9	4.8 ±2
Inhibition	6.8 ±1.9	6.4 ±1.8	6.1 ±2	6.4 ±2	6 ±2	5.9 ±2.1

[1] These data are a courtesy of PD Dr. K. Engel, Dortmund.

Arousal	6.4 ±1.7	6.3 ±1.8	6.2 ±1.8	6.4 ±1.8	6.3 ±1.8	6.2 ±1.9
Aggressiveness	4.6 ±1.9	4.8 ±1.9	4.9 ±1.7	5.2 ±1.9	5.4 ±2	5.4 ±1.7
Strain	6.1 ±1.5	5.8 ±1.6	5.7 ±1.7	6.1 ±1.6	5.8 ±1.7	5.7 ±1.8
Physical complains	6.8 ±1.9	6.1 ±2	6.2 ±2.1	6.7 ±1.7	6.1 ±1.8	5.7 ±2
Health concerns	4.3 ±2.1	4.3 ±2.1	4 ±2.1	3.7 ±1.8	3.9 ±2	4 ±2
Openness	5.3 ±1.8	5.4 ±1.8	5.3 ±1.8	6 ±1.8	6 ±1.9	6 ±1.7
Extraversion	3.4 ±1.9	4 ±1.9	3.9 ±1.9	4.1 ±2.1	4.6 ±2.1	4.4 ±2
Emotionality	7.1 ±1.6	6.8 ±1.9	6.6 ±2	7.3 ±1.4	6.9 ±1.7	6.6 ±2

The means and standard deviation are shown (Anorexia N=229, Bulimia N=405).

3.2 Narcissism inventory

Table 2 shows the scales of the narcissism inventory. Here too, changes in the mean values became apparent, even more than with FPI-R.

Table 2: Scales of the narcism inventory for "admission", "release" and „follow-up".

Narcism inventory	Anorexia			Bulimia		
	Admission	Discharge	Follow-up	Admission	Discharge	Follow-up
Powerless self	32.3 ±9.7	27.2 ±10.1	27.1 ±11.2	33.1 ±9.5	27.3 ±10	26.1 ±10.9
Loss of Affect-Impulse-Control	30.7 ±8.5	28.6 ±8.9	27.9 ±9.1	33.3 ±8.8	30.2 ±8.6	29.2 ±9.1
De-realisation/ De-personalisation	29.9 ±10.7	25.3 ±10.6	24.7 ±11.7	29.8 ±10.5	25 ±10.3	24 ±11.1
Basic hope-potential	30.2 ±9.3	32.1 ±9.6	32.3 ±9.5	28.9 ±9.4	32 ±9.6	33.8 ±9.7
Diminished self-image	35.1 ±8.7	31.9 ±9	32.3 ±9.3	34.9 ±8.8	31.2 ±8.9	30.3 ±9.3
Negative body-self	30 ±11.1	24.5 ±10.9	25.2 ±12.5	31.2 ±11.4	24.7 ±11.4	24 ±12.2
Social isolation	30.8 ±8.6	28.5 ±8.6	28.3 ±8.7	29.4 ±8.6	27.5 ±8.2	27.1 ±9
Greatness self	24.3 ±7	26.1 ±6.9	26.7 ±6.8	26.4 ±7.4	28.2 ±7	28.8 ±7.2
Narcistic rage	26.8 ±8.1	26.6 ±7.7	26.4 ±7.6	28.1 ±8.1	27.8 ±7.6	27.3 ±7.8
Object devaluation	26.9 ±7.1	25.4 ±7.3	26.7 ±7.7	28.7 ±7.2	26.7 ±7.5	27 ±7.6
Symbiontic self-protection	38.7 ±5.7	36 ±6.3	37.4 ±6.4	37.6 ±6.5	35.4 ±6.6	36.7 ±6.5
Hypochondric anxiety bonds	26.1 ±9.4	23 ±9.3	22.7 ±9.6	25.7 ±9	22.5 ±8.5	23.1 ±9.1
Narcistic Illness gain	24.6 ±9.3	22.6 ±9.3	21.4 ±10.3	21.4 ±8.7	19 ±8.1	19.4 ±8.9

The means and standard deviation are shown (Anorexia N=229, Bulimia N=405).

Significant changes can be seen between admission and discharge on the scales 6 "negative body-self", 1 "powerless self", 3 "de-realisation/

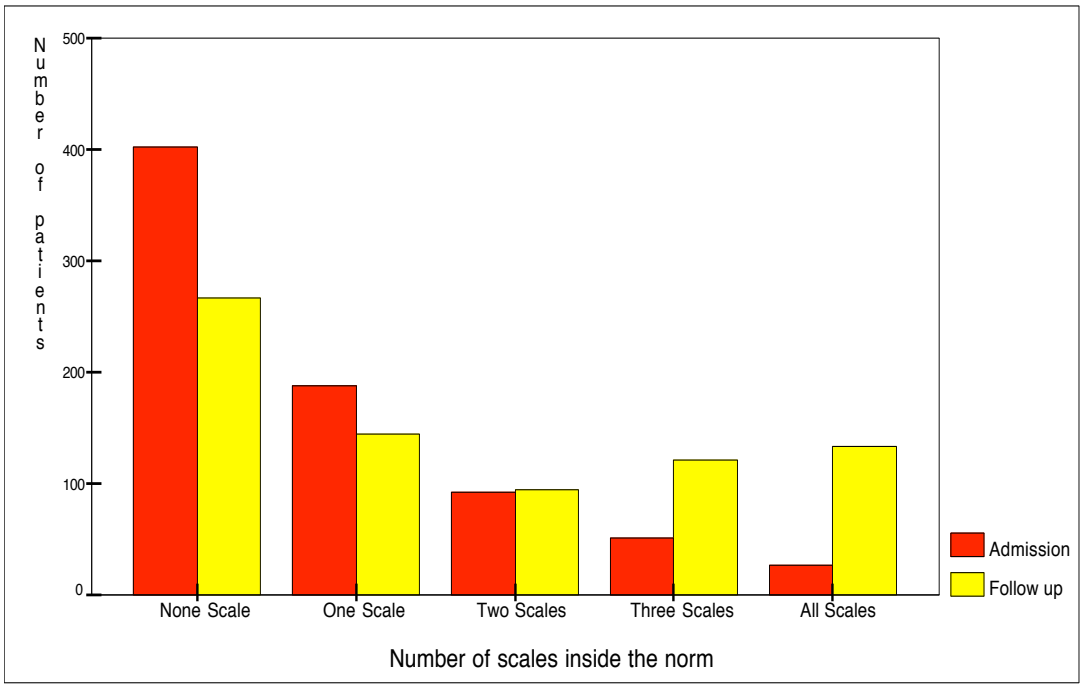
depersonalisation“, and 5 ”diminished self-image“. Those effects became apparent in all three diagnostic groups. Accordingly, the patients know to accept their bodies slightly better after in-patient treatment, they feel less powerless and inferior. Over all, changes rather seem to take place between in-patient admission and discharge than between discharge and the follow-up assessment, although most patients experienced outpatient psychotherapy after in-patient treatment. Clearly, distinct effects of intense in-patient psychotherapy can be seen from these questionnaires.

A comparison between the groups of patients with eating disorders and the control group (120 female medical students) revealed significant deviations on many scales. Particularly significant differences emerged for the scales powerless self, de-realisation, diminished self-image, negative body- image, and social isolation. Known clinical signs and symptoms are hence well reflected in the questionnaire data for these patients.

3.3 Calculation and distribution of the success criterion

Figure 1 shows the number of patients that deviated in the four target criteria scales from the normal range at the point of admission and follow-up assessment. The largest group deviates from the normal range on all four target scales. In contrast 4 % of patients fell within the normal range on these scales (despite an apparent eating disorder). Some change is visible from the time of admission to follow-up assessment. A few patients, who previously were outside the defined normal range, now fall within. In all, only about 20 % of patients experience this degree of change, with the majority remaining within the pathological range on the scales.

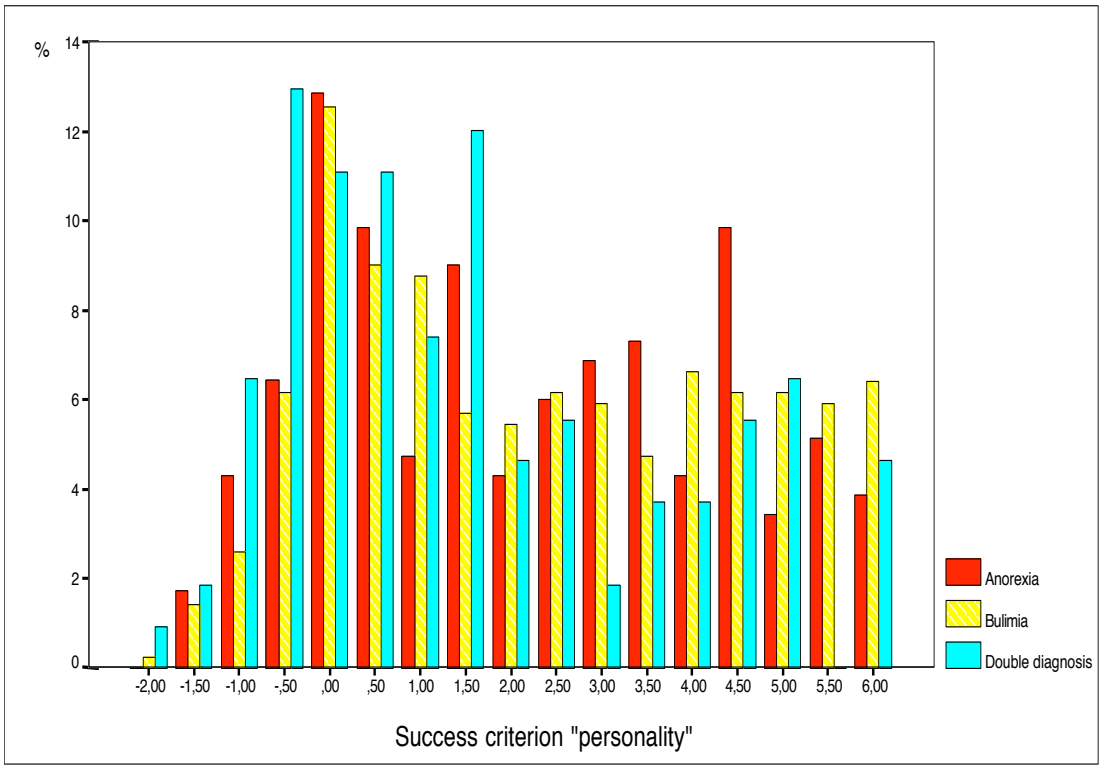
Fig. 1: Number of patients and personality scales outside the norm



Note: Recorded are the FPI scales for life satisfaction and arousal as well as from the narcism inventory the scales powerless self and negative body-self.

The success criterion used in this study has been developed based on the clinically significant change criterion of Jacobsen and Truax, (1991). It is composed of absolute values (whether or not a patient is within the normal range of a respective scale) and the values for changes (whether or not a patient changed clinically significantly since admission). Figure 2 shows the distribution of the success criterion for the groups of anorexia and bulimia nervosa patients. A relatively large group of patients (13 %) can be seen who do not show any evidence of change. A further 13 % of the patients showed evidence of deterioration during the course of treatment, the majority of the patients however showed improvements, which show a relatively wide deviation. Approximately a third of the patients show distinct improvement (value of success ≥ 3). Comparing the three diagnosis groups it becomes apparent that anorexia and bulimia patients show similar success ratios, whereas patients with double diagnosis show significantly less evidence of success.

Fig. 2: Distribution of percentages for the success criterion "personality" for each diagnosis group.

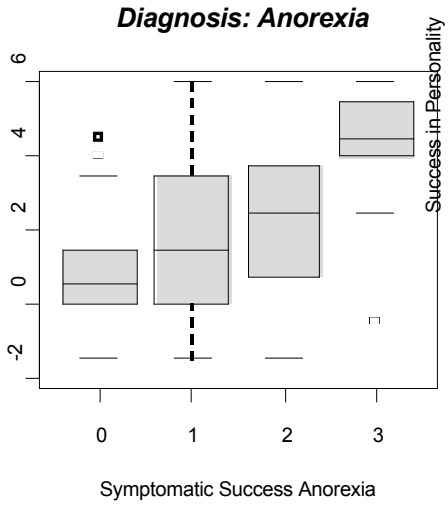


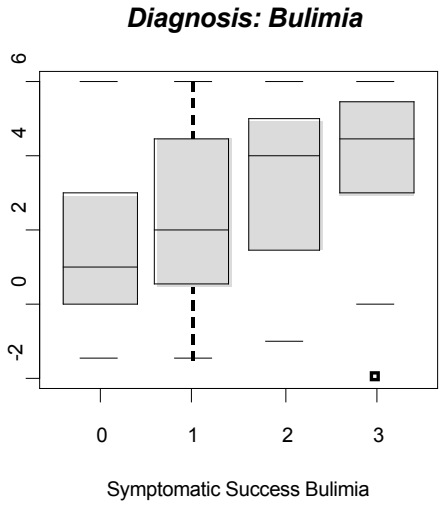
Note: The criterion is the sum of the scales, which at the moment of follow up were within the norm (coded [0,1]) and the number of scales that changes clinical significant since admission (coded [0, ½]).

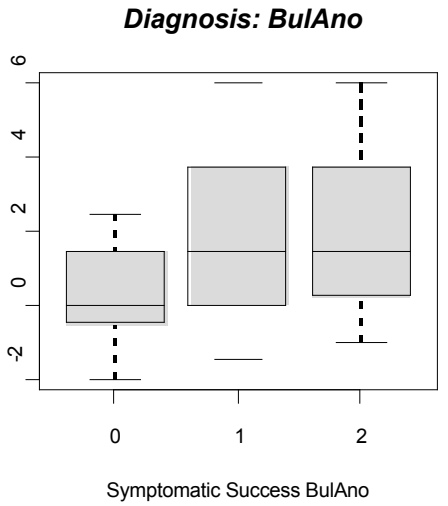
3.4 Relations between the criteria for improvement on personality and symptommeasures

These relations are shown in figure 3 (the symptomatic criterion in four levels, the personality criterion scaled to the interval). Good agreement can be seen from these illustrations. They are however not really linear, as the respective correlations (Spearman's Rho) for anorexia was 0.52, for bulimia 0.35 and for double diagnoses 0.27. According to that, change in personality corresponds with changes in symptoms. The direction of causality, if any, in this relationship remains unclear.

Fig. 3: Relation between symptomatic success and success in personality scales







Note: Symptomatic success: 0 = all relevant symptoms are outside the norm
1 = 1 symptom inside the norm,
2 = main symptom (weight or binges) and another symptom inside the norm
3 = all relevant symptoms inside the norm
No patient of the group with double diagnosis (BulAno) reached the value 3 for symptomatic success.

3.5 Prediction

To what extent is prediction of a positive outcome possible on the personality measures? For this, two models have been modified and successively tested. The first model tests the association of relevant patient traits with the degree of patient improvement. The second model tested, whether or not the therapy parameters (duration of in-patient treatment, number of therapy sessions)

influenced the degree of improvement. To compensate for model violations, the response-variable has been transformed according to the BoxCox-transformation (lambda=. 24).

Two combined measures, which characterised the symptomatic state at admission, have been applied as potentialpredictors. Further predictors include the extent of pre-treatment, the duration of illness, the patient's weight (BMI), their desired weight, the overall SCL-90-value, as well as the sum of the three EDI scales. The calculated first model, however, only clarifies 5 % of the variance (adjusted). For the second model, the amount of therapy was considered, as the total number (duration of in-patient treatment in days) and the weekly "dose" in hours. Likewise within this expanded model, only 5 % of the variance could be accounted for. Accordingly, prediction before treatment as to later therapeutic success in the personality domain was not possible, at least with the variables employed in the present study.

4. Discussion

Both, the Freiburger Personality Inventory as well as the Narcissism Inventory reflect clinically known psychopathological signs and symptoms of patients with eating disorders. It has to be emphasised however, that regardless of their ascertained diagnoses of eating disorder, not all patients deviated in the questionnaire values from the normal range. There were a small number of eating disorder patients with normal questionnaire values. It is possible that these patients were dissimulating. But it is also conceivable, that they developed anorectic or bulimic reactions due to an acute crisis, with the personality in fact remaining relatively unaffected. The score distributions are relatively broad; i.e. the patients are very different. Changes, which are reflected in the questionnaire values, occurred during in-patient treatment but also during subsequent outpatient treatment.

Nevertheless the values of most patients did not normalise during the observation period. They felt slightly better but the majority did not reach the values of a norm-group (FPI-R) or a healthy control group in the narcissism

inventory, respectively. This can be seen to be paralleled by the successful outcomes wheresymptoms were concerned: most patients showed marked eating disorder symptoms after 2 ½ years of observation, only about 36 % of which were considered clinically healthy (Kächele 2000).

These slow and limited changes in the questionnaire values of the FPI and narcissism inventory match theoretical considerations as to personality and eating disorders well. Personality is considered an enduring construct, which evolves and changes only very slowly. In addition clinical experience from work with patients with eating disorders corresponds with these results: changes only happen gradually. It is clear that change on the narcissism inventory appear more frequently during the three months (on average) of in-patient treatment, whereas fewer changes occur in the follow-up period, when most patients received outpatient therapy. These findings support and justify such intensive psychotherapeutical procedures as in-patient treatment. Dancyger et al. (1997) reported very similar results. In the latter case, anorexic patients were studied by means of the MMPI at hospital admission, discharge and follow-up evaluation.

Direct comparisons between change (successful outcomes) in the fields of personality and symptoms show moderate agreement. Symptomatic improvement went along with improvements in the domain of personality; the correlation coefficients (Spearman's Rho), however, were only of moderate strength. The question of whether changes in the fields of personality and apparent symptoms coincide or take place in succession, and if change in one field (e.g. personality) is a requirement for change in the other (e.g. symptoms), remains unclear and will be the subject of future investigation.

Successful prediction of improvement in the personality domain could not be achieved. Change in personality could also not be explained by patient variables such as degree of apparent symptoms, duration of illness, number of previous treatments etc., or therapy variables such as duration and intensity of in-patient therapy. The variance accounted for in each case was only around. 5 %. These results correspond to those reported by Kächele (2000), which are

related to success regarding apparent symptoms. Also from this work, no safe method for prediction emerged.

Consequently, it remains unclear with what the changes of in-patients with eating disorders are connected. This problem should be the subject of future investigation, which should include a discussion on the relatively short duration of follow-up. It is conceivable that many patients after 2 ½ years are still in the process of symptomatic and personality related development, and recognisable effects only become apparent at a later stage of the course of their illness.

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