Course of Improvement during Two Years in Psychoanalytic and Psychodynamic Outpatient Psychotherapy

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Abstract

Objective: To assess and predict level and course of symtomatic improvement in psychoanalytic (PA) and psychodynamic psychotherapy (PD).

Material and Methods: In a comprehensive longitudinal study, course of improvement of 116 patients in PA and of 357 patients PD was tracked over a period of two years and analyzed via hierarchical linear models.

Results: At baseline, over 90% of the patients reported considerable psychological, physical, or interpersonal distress. In both forms of treatment, course of improvement was best fitted by a linear model as compared to a logarithmic one. Symptom distress decreased notably within two years, with an especially sharp decline already before the beginning of treatment. No significant differences between forms of treatment as to level or pace of symptom improvement could be observed. Prediction of speed of improvement was poor, with initial symptom distress showing the strongest influence, while initial helping alliance had no predictive value. When comparing patients who finished their treatment within the two-year observation period to those with still ongoing treatments, the former showed quicker symptom improvement.

Discussion: Implications for psychotherapy provision are discussed.

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Since the first publication of Peter Fonagy's "open-door review" ten years ago (now available in its 2nd revision (1)), a considerable bulk of evidence on outcome of psychoanalytically oriented treatments has been accumulated, especially phase IV research (2) on psychoanalytic treatments of limited duration and session frequency. Nevertheless, Sandell's (3) scepticism ("... psychoanalysts have been strangely uninterested in demonstrating the value of their practice in any systematic way that is likely to satisfy the traditional scientific community", p. 922) is still justified since, even though the number of psychoanalytic outcome studies has been steadily increasing, compared with research on other forms of psychotherapy it remains strikingly sparse. This is especially true for long-term (sometimes unlimited) psychoanalytic psychotherapies with high session frequency ("classic" psychoanalyses).

Many studies rely on retrospective assessment of outcome. Using Pfeffer's (4) follow-up methodology, psychoanalysts could comply with a retrospective assessment of outcome (e.g. (5-7)). While the debate on the pros and cons of retrospective outcome evaluation may still be open, this does not necessarily mean that their results are useless, but too many questions are left unanswered.

However, long-term prospective evaluations of psychoanalytic treatments are rare. In the landmark study of the Menninger-Foundation (for an overview see (8)), over a period of 30 years, 42 severly impaired inpatients (20 in psychoanalytic psychotherapy and 22 in psychoanalysis) were comprehensively evaluated at the start and the end of treatment, and about two years after termination, and for the rest of their lives. At the end of treatment, psychological functioning of most patients was improved (however, not as much as expected) and could be maintained at about this level during follow-up.

In the Heidelberg Follow-up Study (9), 208 patients (among them 36 patients in psychoanalysis and 33 in psychodynamic psychotherapy) were prospectively assessed at intake, at the end of treatment and about 3.5 years after treatment termination. While at end of treatment patients in psychoanalysis (usually 2-3 sessions scheduled per week) showed considerably better symptom improvement than patients in psychotherapy, the reverse was the case at follow up. However, clinical expert assessments through goal attainment scaling at follow up were in favor of patients in psychoanalysis.

The Berlin Psychotherapy Study (10;10;11) yielded better improvement for psychoanalytically than for psychodynamically treated patients on several outcome criteria, even though no differences in improvement of symptomatic impairment has been found. The therapists' evaluation of the helping alliance was found to be predictive for outcome.

An innovative design was realized in the STOPP project (3), i.e. patients in various stages of treatment (before, during, or after long-term psychodynamic therapy or psychoanalysis) were assessed annually over a three-year period. Comparing the 74 patients in psychoanalysis (four to five sessions a week) with the 331 patients in psychoanalytic psychotherapy (two to three sessions a week), both groups started treatment at about the same level of symptom distress (measured via the Global Severity Index of the SCL-90-R (12)). At the end of treatment, however, patients in psychoanalysis were somewhat less distressed than the patients in psychotherapy, and this difference substantially increased during follow-up. Concerning social functioning, patients in psychoanalysis started rather better-off, but both groups showed about the same amount of improvement until follow up. In a subsample of 156 patients, post-treatment change could be predicted by frequency and duration in interaction, with worse outcome related to higher session frequency and shorter treatment duration (13).

Similarly, the "Practice Study of Analytic long-term Therapy" (PAL, (14;15)) could not reveal differences in outcome (SCL-90-R's GSI) at treatment termination between 32 patients in psychoanalysis (3-4 weekly sessions) and 27 in psychodynamic psychotherapy (one weekly session). However, the earlier had achieved somewhat more "structural change" (16) at the end of treatment, while – since the study is ongoing – the extent to which these changes persist after treatment is still unclear.

Furthermore, results of another ongoing research project are eagerly awaited: the "Munich Psychotherapy of Depression Study" (MPDS (17)) also emphasises the measurement of mode-specific long-term effects of psychoanalysis (structural change, change in object relations and change of defence mechanisms) in each 30 patients in psychoanalytic or psychodynamic psychotherapy.

In sum, there is a considerable lack of comprehensive prospective longitudinal studies of psychoanalysis or psychoanalytic psychotherapy as performed in daily practice (cf. (18)). So far, no final conclusions can be drawn as to course of improvement, especially after termination of treatment, and predictors of treatment outcome.

Usually, researchers collected data at the beginning and end of treatment, and at one or more follow-up time points. Thus, empirical data about how treatment outcome develops over time hardly exists, which limits our understanding of possible differences in outcome between (e.g.) various forms of psychotherapy. These treatments usually differ in length (as in the projects cited above). Thus, it could be that the speed of improvement is similar in two treatment groups, but that the course of improvement only continues in patients with longer treatments. Thus, length of treatment would make the difference, but not the clinical specifications and their theoretical background. Longitudinal data gathered independently of the actual length of treatment are needed to provide the information about whether and when the courses of improvement drive apart in various forms of psychotherapy.

Such a longitudinal perspective has been chosen for this study. The course of symptomatic improvement in analytic and psychodynamic psychotherapy during a two year observation period will be statistically modeled, i.e. characteristic course parameters like starting point and speed will be estimated. Also, possible impact of covariates such as SES, initial impairment, form and planned amount of treatment on course of improvement will be examined. Focusing on differences between these two forms of analytically oriented treatment, specific research questions pertain to:

(a) Initial impairment in relevant domains (symptom, physical, and interpersonal);
(b) Course of symptom improvement;
(c) Predictors of course of improvement;
(d) Course of improvement after short-/mid-term and long-term psychotherapy;
(e) Course of symptom distress post-treatment.

Method

Design and data collection

From September 1998 until February 2002, data for the study *Transparency and Outcome Orientation in Outpatient Psychotherapy* (TRANS-OP) were collected consecutively by the *Center for Psychotherapy Stuttgart* (CPR). By means of a longitudinal design, a sample of N = 939 insurees of a major private health insurance company (*Deutsche Krankenversicherung*, DKV) from all over Germany have been recruited when they applied for subsidized outpatient psychotherapy (what is required for reimbursement if psychotherapy of more than 25 sessions is intended). For the patients, the design of *TRANS-OP* comprised altogether five measurement points during a two-year period. Furthermore, therapists were contacted via their patients and requested to contribute their clinical judgment at intake and 1 1/2 years thereafter.

Application for outpatient psychotherapy in Germany comprises several steps including patients' and therapists' applications to the health insurance specifying the intended form and

duration of treatment. In addition, the therapist is requested to send a detailed report to an experienced peer-reviewer (paid by the insurance) which includes clinical assessment of patient health status, treatment plan, and expected treatment success. The health insurance company usually follows the peer-reviewer's suggestion about the amount of sessions. The patient is finally being notified about the number of sessions which will be reimbursed. In case therapist and patient wish to prolong treatment, an additional application has to be presented which then again undergoes peer review.

insert Figure 1 about here

All patients received questionnaires at the beginning of their psychotherapy as well as 1 1/2 years and two years thereafter. Intermediate measurement points t2 and t3 were administered randomly at two out of seven possible points in time. This design was optimized for the application of Hierarchical Linear Models. It provides a rather fine-graded time grid for the sample (a total of 10 measurements over two years), while at the same time keeping the burden on the individual patient at an acceptable level. Since we expected more rapid change in the first year, we chose non-equidistant intervals to allow for more frequent assessments in the early treatment phase.

In this paper, data analyses will focus on those patients who applied for psychoanalytic (PA; N = 144) or psychodynamic psychotherapy (PD; N = 472), while findings on patients who intended to start cognitive-behavioral therapy (N = 283) will be reported elsewhere. High response rates confirm the advantages of this measurement plan. 473 of the 616 subjects (76.8%) who had been contacted by the CPR returned their first questionnaire (116 or 80.6 % in PA and 357 or 75.6 % in PD) and gave their written consent to participate. For these 473 participants, response rates for the succeeding second, third, fourth and fifth patient questionnaires were 91.8%, 86.7%, and 78.9%, and 75.5%[1]. Also the therapists' readiness to participate was quite notable, i.e. 312 (66.0% of participating patients') sent back their first, and 274 (57.9%) their second questionnaire. Neither patients' nor therapists' return rates differed significantly by form of intended treatment.

Data Sources and Assessment Instruments

Measures included assessment of the central problems for which people seek professional help, i.e. psychological and physical symptoms as well as social distress and impairment of life quality. In addition, therapists were asked to provide their clinical judgement, and the DKV contributed information about health service utilization.

Patient. Psychological impairment was measured through the German version (19) of Derogatis' (12) Symptom-Check-List (SCL-90-R). This is a widely used self-report scale comprising 90 items each on a five-point Likert scale ("not at all" ... "very much"). The Global Severity Index (GSI) indicating the mean impairment over all 90 items will be used throughout this paper as a global indicator of psychological impairment. *Interpersonal problems* were assessed by the subscale "Interpersonal Relations" of the German version of the Outcome Questionnaire-45 (OQ-45.2) (20) consisting of 11 five-point items. *Physical complaints* were tapped into by means of the "Giessener Beschwerdebogen" (GBB-24) (21) with 24 five-point items of which a sum score was calculated as global indicator of subjective physical impairment. *Life satisfaction* was measured by the "Fragebogen zur Lebenszufriedenheit" (FLZ) (22) which inquires eight crucial (health, job, friendships, etc.) areas of life satisfaction. A sum score of these seven-point items reflects general satisfaction with life. The quality of the *patient-therapist relationship* was measured by the German version (23) of Alexander and Luborsky's "Helping Alliance Questionnaire" (24). Patients were presented eleven six-point items. Overall item means yield a global rating of the quality of the helping alliance. Single items assessed *therapy motivation* ("With regards to this treatment, I am not ... very motivated", four point scale), *problem duration* ("How long do the problems persist which you need help for?", six point scale) and duration of *sick leaves* during the year prior to application for treatment (five categories).

Therapist. Patient's impairment from therapists' view was measured by the "Impairment Score" (25) which comprises three five-point items (psychological, physical, and social problems) and a sum score. The Quality of the *patient-therapist relationship* from therapists' point of view was assessed by the "Helping Alliance Questionnaire" (HAQ) (23) which contains nine six-point items (see above). In addition, we took the *diagnostic information* (coded according to ICD-10, (26)) from the application forms which therapists are requested to fill out for subsidization of the treatment. For those therapists who participated in the study, we obtained the diagnostic information from their first questionnaire.

Health Insurance Company. The *DKV* provided dates of first inquiry of the insuree about reimbursement of outpatient psychotherapy, of therapist's and insuree's application for reimbursement, of approval of reimbursement, and of beginning of treatment (date of first reimbursed session, up to five probatory sessions not included). Furthermore, information on form of psychotherapy (as indicated on therapists' application form) as well as on number of sessions applied for, reimbursed, and actually utilized was supplied.

Statistical Procedures

While most patients sent back four or even all five questionnaires, due to the study design and differences in willingness to participate, the number of measurement points varies. *Multilevel Analysis* (27) or *Hierarchical Linear Modelling* (28;29) is the method of choice for modeling courses of improvement using such unbalanced longitudinal data. HLM makes it possible to use all available data of all participants, even if they missed a number of measurement points and took part at different time intervals, as long as data loss occurred at random. This condition is met (at least for the responders) in the study since patients were randomly assigned to the intermediate measurement points.

Analyses were carried out using S-PLUS$^{®}$ (version 6.1). First, (unconditional) level-1-models for course of improvement before, during and after treatment were generated. Second, (conditional) level-2-models scrutinizing predictor effects on the course of improvement during and after treatment were estimated. In order to avoid very small group sizes, certain categories of factorial covariates were collapsed: family status into not married, married, and "separated" (widowed, divorced, living separately); educational status into high track ("Gymnasium"), middle track ("Realschule"), and low track ("Hauptschule") plus others; professional status into university degrees vs. no university degree; duration of sick leaves into up until vs. more than one month; problem duration into up until two, ten or 20 years; and amount of initially approved sessions in fewer than 80, 80, or more than 80 for PA, and fewer than 50, 50, or more than 50 for PD.

Sample

The sample consisted of highly educated persons most of which, as can be expected due to their membership in a German private health insurance company, held a university degree (see Table 1). Also note the high percentage of males compared to other studies.

insert Table 1 about here

Predominant *ICD-10* diagnoses (see Table 1) included affective (F3) and neurotic disorders (F4), while behavioral syndromes with physical factors and personality disorders were diagnosed to a lesser extent. Unfortunately, a considerable amount of ICD-10 diagnoses were not available because therapists did not participate in the study or provided no ICD-10-coded diagnoses.

Subjects did not differ by form of treatment on baseline SES variables and diagnoses, except that persons intending to start PA were somewhat younger (t = -1.7963, df = 471, p = 0.07) compared to those expected to begin PD.

Treatments

Information on the form of treatment was obtained from the therapist's application for subsidization to the health insurance company. On this form, he or she had to indicate and

justify (see above) which form of psychotherapy (PA, PD, or CBT) he or she wished to carry out with the person seeking treatment.

Thus, in this contribution PA refers to treatments as they are carried out in day-to-day practice, i.e. this includes treatments with 2-4 sessions per week and varying length. PA as reimbursed by German Health Insurance Companies is usually restricted to 240 treatment sessions. In contrast, PD is restricted to a total of 80 sessions, with usually one session a week. While PA aims at resolving the patient's neurotic structure by using processes of transference, counter-transference and interpretation of resistance, PD only takes into account these processes while focusing on actual neurotic conflicts.

There is no further information available about what treatment was actually carried out. However, every application went through a peer review system (see above) where the treatment plan was assessed by an experienced clinician and thus, clinical standards were ensured.

Number of sessions initially approved for reimbursement differed markedly by form of intended treatment, i.e. subjects whose therapists had applied for PA mainly were approved 80 sessions (median; mean = 87.52, SD = 44.66), while those in PD were mainly approved 50 sessions (median; mean = 40.24, SD = 15.30). German psychotherapy guidelines suggest certain contingents of sessions for each form of outpatient treatment. In our study, peer reviewers rather strictly adhered to these contingents, i.e. for PA, mostly (53.1%) approved 80 sessions (vs. 23.0% less than 80 and 23.9% 160 sessions), and for PD mostly (63.1%) approved 50 sessions (vs. 35.7% less than and 1.2% more than 50 sessions).

67.7% (PA: 57.0% ; PD: 71.3%; χ2 = 5.1, p < .05).) of the 532 (86.3% of entire sample) treatments which actually started (i.e. more than one session reimbursed) were terminated within the two-year observation time. Of these, mean treatment duration was 12.63 (SD = 6.69) months and mean session number was 61.52 (SD = 49.43) for treatments intended as PA resp. 11.8 (SD = 6.7) months and 32.7 (SD = 20.0) sessions for treatments intended as PD.

Observation time for the course of improvement was two years for all subjects, but for the service utilization data - due to consecutive sampling - varied from two to more than four years (whole study time Sept. 1998 until Feb. 2002). Thus, the distribution of treatment length could be estimated more realistic by Kaplan-Meier survival analysis censoring cases (106 or 19.9 %) which did not terminate treatment within the study time. Median treatment length was estimated to 17.7 months (CI [95%] = 15.9 - 19.5; 75th percentile = 28.5 months). Treatment length was substantially related to type of intended treatment: the estimated median treatment length was 21.4 months (CI = 18.3 - 24.5) for PA, and 16.0 months (CI = 14.2 - 17.8) for PD (75th percentiles: PA = 35.0, PD = 25.9; log rank = 13.3, df = 1; p = < .001).

<div align="center">Results</div>

Initial Impairment

For almost 90% of each group, self-reported psychological symptom severity (SCL-90-R GSI) lied above the 68th percentile of the normative sample and displayed impairment in this sense (Table 2).

insert Table 2 about here

More than two thirds showed impairment in interpersonal functioning, and around 60% reported severe physical impairment. Looking at the pattern of impairment, a combined score (psychological, interpersonal, and physical impairment) yielded that almost the half of the subjects (PA: 46.9%; PD: 44.8%) displayed impairment in all three, and a considerable amount (PA: 34.5%; PD: 35.2%) in two domains, while only some (PA: 12.4%; PD: 12.2%) showed impairment in just one of those three domains, and hardly any (PA: 6.2%; PD: 7.9%) were in the functional range on all three domains at the time of application for subsidization of treatment. Furthermore, about two thirds of the participants reported serious impairment in quality of life. Comparably, about 70% of the participants (of those whose therapists

contributed data for the study) were attested severe (i.e. more than 5 IS-points, cf. Schepank, 1995) overall initial impairment by their therapists.

Initially, the quality of the helping alliance was rated rather high with no differences by form of psychotherapy.

Course of Improvement

Course of improvement was operationalized as change in symptom severity on SCL-90-R GSI. The resulting models (mean fixed effects) for the time segments before and in treatment intended as PA or PD are displayed in Figure 2. Interrupted horizontal lines indicate the cut-off-points at the 68th (no impairment vs. impairment) and the 95th (impairment vs. severe impairment) percentile of the normative sample.

insert Figure 2 about here

Figure 2 shows linear fits only. Alternatively, logarithmic fits were tried for the time in treatment and the time in treatment plus the time before treatment (see Table 3). However, differences between the goodness-of-fit indices ("smaller is better", cf. Pinheiro & Bates, 2000) were marginal for the entire sample as well as for the subgroups PA and PD. Thus, following the criterion of simplicity, the linear model was given priority because the more complex model, the logarithmic one, did not add substantial gain.

insert Table 3 about here

As can be seen in Figure 2, marked improvement, i.e. 0.0589 GSI points per month (PA: 0.0748; PD: 0.0586), took place already prior to the start of outpatient psychotherapy (note though that number of pre-treatment observations is rather low). Participants then entered treatment with 0.9339 GSI points (PA: 0.9775; PD: 0.9152) with a monthly reduction in GSI of 0.0106 points (PA: 0.0135; PD: 0.0091) which for both groups was significantly different from 0 (PA: t = -4.86524; p <.0001; PD: t = -5.05277; p = <.0001). Even though participants in PA started a little more impaired, they improved somewhat faster than those in PD, leaving the severely impaired range after about 17 months - about one month earlier than those in PD. However, neither difference in intercept nor in slope attained statistical significance.

Predictors of the Course of Improvement

Table 4 shows the HLM coefficients of a comprehensive model which served to scrutinize numerous possible predictor effects on the course of improvement for the time in treatment for both forms of therapy: SES and initial impairment variables, the initial quality of the helping alliance, as well as aspects of the service system (number of initially approved sessions and waiting time for approval of reimbursement).

Apart from the trivial finding that initial GSI was substantially related to intercept, some other variables predicted baseline symptom distress: educational status in both PA (low track starting more impaired than middle track) and PD (low track starting more impaired than high track), and sick leaves in PD (patients with shorter were more impaired at intake than those with longer sick leaves). More interestingly, only few of the predictors in the model affected the speed of symptom improvement: in both PA and PD, initial psychological impairment strongly affected slope (the higher initially impaired, the quicker the improvement), while professional status impinged on slope in PA to some extent (those with no university degree progressed faster).

insert Table 4 about here

Following Liao (1994), the relevance of predictor effects on the course of improvement was further analyzed graphically. According to the principle of ceteris paribus, interesting values of the selected predictor were inserted into the model equation while keeping constant (i.e. inserting means of continuous and modi of discrete variables) all other predictors' values. Figure 3 shows variations of course of improvement for initial psychological impairment and helping alliance (quartile means) for PA. Figure 4 provides the same information for PD.

insert Figure 3 and Figure 4 about here

In both forms of treatment, intercept differed strongly by initial GSI, but also slope was affected, i.e. the higher initially impaired, the faster improved the patients. Contrarily, initial quality of the helping alliance only showed minor effects on intercept, i.e. a tendency to be the lower the better the clients' view of the quality of his or her relationship to the therapist. The helping alliance's effect on slope was negligible as well (although the effects were statistically significant in both types of therapy).

Short-/mid-term vs. Long-term Psychotherapy

Comparison of short-/mid-term (pragmatically defined here as those treatments that were terminated during the two year observation period) with long-term treatments (those which lasted longer than two years) yielded the models graphically displayed in Figure 5.

insert Figure 5 about here

It can be seen in the models for both PA and PD that patients in short-/mid-term and long-term therapy started at the same level of symptom distress, while, trivially, termination status was substantially associated with the pace of improvement. As compared to participants who terminated treatment early, patients who stayed in therapy longer than two years progressed slower by 0.003 GSI-points per month in PA and by 0.006 points in PD resp. However, the difference reached statistical significance only for subjects in PD (PA: $t = -0.829$; $p = 0.408$; PD: $t = -2.891$; $p = 0.004$). The amount of sessions initially allotted (i.e. approved for reimbursement) did not contribute significantly to any of the models.

Post-treatment Symptom Distress

Finally, the relation of course of improvement during treatment and the further development after treatment end was explored. For this purpose, data of the N = 232 participants (PA: N = 44; PD: N = 188) were available who had terminated their therapy during the two year observation time. The predictive value of treatment utilization (duration of treatment and sessions utilized), and treatment outcome (in-treatment slope and GSI at the end of treatment)[2] for psychological distress (GSI) at the end of the observation period was examined by means of a linear regression model. Furthermore, the interaction effect between last in-treatment status and duration of therapy was included in the regression since the time between status at last treatment session and assessment two years after study intake varied substantially between participants. Separate models were computed for the two forms of treatment since treatment utilization differed substantially between them.

insert Table 5 about here

Table 5 shows that for patients who had received PA, psychological impairment as measured two years after study intake was not predicted by any of the variables entered into the regression model. This was different for those patients who underwent PD. For these patients GSI at the last treatment session and the interaction of therapy duration and status showed predictive value.

Discussion

This study was conducted in the context of service research (30). Numerous studies have demonstrated the efficacy of psychotherapy (see (31) for a summary). They showed a systematic decrease of symptoms between beginning and end of treatment, and several also provided information about the health status at later time points. However, little is known about how these gains develop over time (during and after treatment) and how progress is related to the form, amount and length of therapy. This lack of knowledge is of special concern when it comes to health service provision which ideally aims at the optimal allocation of valuable therapeutic resources.

Thus, the main objective of this study was to model the course of improvement and to investigate how it is affected by psychotherapy. Of specific interest were possible differential effects of PA and PD. These two psychoanalytically oriented treatments cover about two thirds of mid- and longterm psychotherapy – i.e. expected treatment length more than 25 sessions – reimbursed in the German health service system.

A two year observation period was chosen for this purpose independently of the length of the applied treatment. The independence of the measurement plan of both treatment length and outcome was of special advantage for studying the impact on outcome of treatments of different length and number of sessions, because otherwise the possible impact of time would remain open. The measurement plan was specifically designed for the application of HLM using random assignment to measurement time points to limit the burden on the patients.

Modeling was conducted separately for the time before and after the first treatment session (one has to keep in mind that first session means here first reimbursed session). There were no significant differences between PA and PD, neither in intercept nor in slope. This is in so far surprising as peer reviewers – in congruence with the German psychotherapy guidelines – suggested more therapy sessions for PA (median: 87.5 sessions) than for PD (median: 40.2 sessions) at first application, and also as actual treatment length was considerably longer for PA (median: 21.4 months) than for PD (median: 16.0 months). Possibly, reduction of symptom distress does not play the same role for these two forms of psychoanalytically oriented treatments.

The observation period began when the insuree contacted the health insurance company and asked for the forms for the application of reimbursement. We understand this request as significant hint that the insuree took psychotherapy seriously into consideration at that time point. This understanding was supported by the observation that study participants displayed clear psychological, physical and social impairment (table 2) at the time when they initiated the application for reimbursement.

According to the models, psychological distress declined quickly in the time before the first session of the eventually reimbursed mid- or long-term psychotherapy. More than one third of the expected improvement over the full two year observation period was achieved during this first phase. This quick improvement might be related to a specific condition of the German service system, i.e. the possibility of up to seven (PA) or five (PD) so-called probatory sessions before the application for reimbursement. Unfortunately, no information was available about whether and when probatory sessions were actually used. Therefore it remains open how many such "preparatory" sessions contributed to this progress. Another possibility, besides mere regression to the mean, is discussed in the research literature as "door handle" effect; i.e., prospect on start of possibly long awaited treatment rises hope and entails swift initial symptom improvement (e.g. (32-34)).

Despite the substantial improvement during the preparatory phase, patients began treatment with considerable psychological distress. According to the model, the initial status of psychological distress as indicated by the GSI-Score was substantially above the 95th percentile of the representative population and declined substantially over the following period of up to two years. Linear models proved equally suitable to describe the course of improvement as logarithmic models. This finding is in contrast to the research literature, where usually negatively accelerating models such as logarithmic, logistic or probit models are proposed (although not actually empirically compared to linear models). Such models suggest "a law of diminishing return" (35), i.e. less additional gain for later additional sessions, whilst linearity implies that at any time of therapy the same amount of improvement can be expected as return for any additional therapy session. However, one has to keep in mind that all these models are population models and thus describe the average course. Application for individual patients should be thoughtfully reflected.

To make such models more helpful for individual treatment planning, predictors are needed which could help to develop more specific models, i.e. specific models for sub-populations. For this purpose, a considerably long list of predictors was explored. Initial psychological impairment showed the most substantial effect on course of improvement after the first therapy session. Patients who started severely impaired improved with high speed,

while those with negligible symptoms remained almost unchanged. Furthermore, some of the SES variables, such as lower professional status, indicated somewhat quicker improvement.

Special clinical attention might be attracted by the finding that the initial quality of the helping alliance did not affect outcome substantially, i.e. in contrast to the research literature (for an overview see (36)), helping alliance hardly discernably impinged on initial status and the speed of symptom improvement. This is in concordance with critical appraisals of the practical clinical value of the helping alliance (e. g. (37)). In the context of service research, a further null effect deserves attention: neither the form of therapy nor the allotted number of therapy session proved as useful predictors for the course of improvement.

Ending psychoanalytic treatment before two years have passed might be considered premature termination by many psychoanalytically oriented practitioners. However, with regard to reduction of psychological distress, patients and therapists appear to behave quite rational. While "early" terminators in PA as well as in PD started at about the same level of psychological distress as continuers, the speed of improvement was considerable higher for terminators than for continuers, especially in PD. Correspondingly, according to the models of course of improvement, "early" terminators are substantially better off than continuers at the end of the two year observation period. These findings raise doubts whether termination was actually premature, but rather indicate that the experience of quick progress allowed termination. Vice versa, one could speculate that continuers actually did need more and longer treatment in order to achieve satisfactory improvement.

Rapid subjective improvement is sometimes understood by clinicians as a hint towards patient's reluctance to actually get involved in therapy. Concerns are raised about the stability of such quick gains. However, such concerns were not supported by the final exploratory regression analysis which did not show that speed of change during therapy negatively affected the mid-term course of psychological well-being after the end of treatment. Rather the opposite is suggested by this study in so far that – at least for PD – last status of psychological distress in treatment proved predictive for the symptomatic status at the end of the observation period.

This study has important implications for psychotherapy provision. Most of the currently suggested approaches rely on the "law of diminishing return" (35). The idea of diminishing returns has been used to justify a strategy of recommending termination or change of treatment in case of slow or non-response (e. g. (38-40)). At least under the conditions of the German health service system and for a time span of two years, this general strategy is not supported. Contrarily, in the light of the findings of this study, strategies for the optimal allocation of valuable – and expensive – therapeutic resources should be reconsidered. The here found linear models for the course of improvement suggest to treat patients until the desired level of psychological well-being is achieved – and to stop treatment as soon as this level is achieved. This means that quick responders should get shorter and slow responders longer treatment. Thus, this outcome-oriented strategy would lead to an individualized allocation of therapeutic resources which takes into account the patient's need for change as well as his or her ability to change. Presumably, health insurance companies and other payers will request a limit for the maximal allowed number of therapy sessions to calculate their costs. The presented models can be used to derive an empirically based guess for such a reasonable limit via simulation studies (41).

Such an outcome-oriented allocation strategy is suggested by this study's results for both forms of psychoanalytically oriented therapies. This would imply a substantial modification of the current situation where typically standard contingents of therapy sessions are allotted (e.g. (42)). In a system optimized this way, contingents would rather serve as limits within which session number and treatment length were individually adjusted to the actually observed individual speed of change. Furthermore, since no differential effects on the course of improvement of psychological distress between PA and PD were found, the same

allocation strategy (with the same limits and same weekly frequency of sessions) would be implied for both forms – provided that improvement of psychological distress were agreed on as the main treatment goal.

Even in that case, the practical use of such a strategy would depend on a convincing operationalization of psychological well-being. Unfortunately, the currently available measures such as the SCL-90-R's GSI score (19) which was used in this study, the OQ-45 total score (20), or the Mental Health Index (43) might be considered as too narrow. Not at last because of that, the final right to decide about termination and prolongation of therapy has to be left to the two main protagonists, i.e. patient and therapist.

This measurement problem is far from being solved, but one would be ill-advised to (re)open the battle field between researchers who advocate large N studies using highly standardized assessment procedures (such as this one), and those – in the tradition of Wallerstein (8) – who promote subtle long-term observations of few patients. Even though one might assume that symptomatic improvement is a common goal in any psychotherapeutic treatment, outcome of especially psychoanalytic psychotherapy might be a more "delicate" matter not commensurable by means of symptom checklists. There remains the hope of other study groups (14;17) to discover differences between forms of psychoanalytic treatments beyond the relief of symptom distress, i.e. long-term changes in structural properties (e.g. illness behavior, social interaction patterns).

The change from setting up standards for treatment length and session frequency to an individualized outcome oriented allocation strategy of service provision would imply a change of paradigm. While the traditional approach refers to the dose-response-model, where amount of therapy (length and session number) are the independent variables and outcome is the dependent one, it is just the other way around for the individualized outcome oriented allocation strategy (41). Besides the possible economic advantage, the individualized strategy would also draw attention to the optimal "handling of time" (e.g. (44)) from a clinical perspective: "... but on the other hand, once settled it takes on the character of an independent variable, that is it becomes part of the setting and an object on which conflicts in the relationship can crystallize. The time agreed upon becomes the scene of struggle involving very different motives — on both sides " (45), p. 253).

Generalization of service research findings call for specific caution. By definition, this research was carried out under the specific conditions of the German health service system. Unfortunately, research across various services systems does not exist yet, and therefore it remains open which of the reported findings hold true under different service system conditions.

One specific question that results from this general limitation is whether and how PD and PA actually differ in practice. There was neither specific training nor any control installed to ensure that the treatments were carried out according to the theoretical concepts. Furthermore, no data were gathered about treatment quality. However, these therapies can at least be considered as intended as PA or PD in the sense, that – according to the rules of the German health service system – therapists and patients applied for reimbursement of costs for PA and PD, and that the treatment plan was approved through peer review.

Further limitations that may be worth to be mentioned include: (1) The two-year observation period of two years might be still too short to judge the stability of the therapeutic gains. (2) Patient recruitment was restricted to privately insured persons which might limit the sample's representativeness for the German service system since better educated insurees with higher income are over-represented. Furthermore, it might be that – compared to clients of e.g. public health insurers – clients of a private health insurance company are highly motivated and able to optimally use health service provision in general (including psychotherapy) since they they dispose of more ressources compared to clients of e.g. public

health insurers. (3) As a special bias it was observed that male and female patients were equally represented whilst usually this relation in psychotherapy studies is about 1:2.

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Footnotes

[1]Not all 473 subjects who participated at t1 were contacted for the succeeding questionnaires since we refrained from sending questionnaires to subjects who refused to participate at any time of the study.

[2]Slope and last in-treatment status were obtained form the random effects coefficients of the unconditional hierarchical linear model using all observations in treatment (see above).

Table 1: Socio-economic status and main diagnoses (ICD-10) by form of intended treatment

Variable (N_PA/N_PD)	Categories	PA N	PA %	PD N	PD %
Sex (116/357)	male	50	43.1	158	44.3
	female	66	56.9	199	55.7
Age (116/357)	19 and younger	3	2.6	4	1.1
	20 – 29	21	18.1	44	12.3
	30 – 39	24	20.7	70	19.6
Mean (SD)	40 – 49	29	25.0	119	33.3
PA = 41.81 (12.51);	50 – 59	32	27.6	100	28.0
PD = 44.04 (11.34)	60 – 69	6	5.2	15	4.2
	70 and older	1	0.9	5	1.4
Marital Status (115/356)	single	39	33.9	104	29.2
	married	47	40.9	160	44.9
	divorced	16	13.9	51	14.3
	living separated	12	10.4	32	8.9
	widowed	1	0.9	9	2.5
Educational Status (115/355)	"Hauptschule" (low track)	7	6.1	26	7.3
	"Realschule" (middle track)	13	11.3	60	16.9
	"Abitur" (high track)	93	80.9	257	72.4
	other or no degree	2	1.7	12	3.4

table continues

Variable (N_PA/N_PD)	Categories	PA N	PA %	PD N	PD %
Professional Status (115/352)	in professional training	9	7.8	22	6.25
	professional training completed	11	9.6	48	13.6
	advanced professional degree	9	7.8	37	10.5
	university degree	71	61.7	206	58.5
	no professional degree	8	6.9	14	3.9
	other professional degree	7	6.1	25	7.1
ICD-10 Diagnoses[a] (86/300)	F30 - F39	42	48.8	152	50.7
	F40 - F48	30	34.9	123	41.0
	F50 - F59	6	6.9	10	3.3
	F60 - F69	8	9.3	12	4.0
	other	0	0	3	1.0

[a] F30 - F39: Mood (affective) disorders; F40 - F48: Neurotic, stress-related and somatoform disorders; F50 - F59: Behavioral syndromes associated with physiological disturbances and physical factors; F60 - F69: Disorders of adult personality and behavior.