

## Inpatient and Day-Clinic Experience Scale (IDES) – a Psychometric Evaluation

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### Zusammenfassung

*Tageskliniks- und Stationserfahrungsbogen – eine psychometrische Evaluation*

**Fragestellung:** Der Tageskliniks- und Stationserfahrungsbogen (TSEB) wurde entwickelt, um sogenannte *common factors* in multimodalen Psychotherapie-settings aus der Patientenperspektive zu erfassen. Der Fragebogen erfasst verschiedene Aspekte von therapeutischen Beziehungen, ein positives Selbsterleben sowie eine kritische Einstellung gegenüber der Therapie.

**Methode:** Die psychometrischen Eigenschaften und die Faktorstruktur des Bogens wurden in drei Stichproben (Gesamt N = 821) evaluiert.

**Ergebnisse:** Konfirmatorische Analysen zeigen einen guten Modellfit und stützen die vorgeschlagene Struktur mit 25 Items und sieben Skalen. Die Reliabilitätswerte waren auch über mehrere Messzeitpunkte hinweg stabil. Bezüglich der Validität waren frühe TSEB Messungen moderat mit dem Therapieergebnis assoziiert.

**Diskussion:** Der TSEB ist ein psychometrisch reliabler Fragebogen für die Evaluation von Prozessfaktoren in tagesklinischen und stationären Psychotherapie-settings.

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### Keywords

Inpatient Psychotherapy – Day-Clinic – Psychotherapy Process

### Summary

**Objectives:** The Inpatient and Day-Clinic Experience Scale (IDES) was developed to assess common factors in a multimodal psychotherapy setting from the patients' perspective. The questionnaire measures different aspects of therapeutic relationships, a positive self-view and a critical attitude towards therapy.

**Methods:** Three samples (total N = 821) were used to evaluate the psychometric properties and factor structure of the questionnaire.

**Results:** Confirmatory analyses show a good model fit and support the proposed structure with 25 items and seven scales. In addition, reliability indices were stable throughout multiple

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assessments over time. Concerning validity, early IDES process measures were moderately associated with symptomatic improvement.

**Conclusions:** The IDES is a psychometrically reliable questionnaire for the evaluation of process factors in inpatient and day-clinic psychotherapy settings.

## 1. Introduction

Understanding the processes that bring about psychotherapeutic change is a central goal of process-outcome research (Crits-Christoph et al. 2013; Orlinsky et al. 2004). Essential prerequisites for the study of therapeutic processes are adequate instruments that capture relevant and possibly specific aspects of the treatment under investigation. Compared to individual outpatient psychotherapy, the study of process factors in multimodal inpatient or day-clinic psychotherapy is especially complex due to the simultaneous influence of different treatment components (i.e., individual therapy, group treatments, creative and body-oriented therapies), and multiple relationships.

The general effectiveness of inpatient psychotherapy has been established in two independent meta-analyses (Kösters et al. 2006; Liebherz & Rabung 2013), and several studies show promising results for the effectiveness of day-clinic psychotherapy as well (e.g., Dinger et al. 2014; Zeeck et al. 2009a; b). However, little is known about relevant processes that promote change in these settings. It is further unclear to what degree findings on process-outcome relationships from individual outpatient therapy may be applied to the specific setting of multimodal inpatient or day-clinic psychotherapy. In these settings, patients receive different treatment components, which are usually carried out by an interdisciplinary team. In addition, some therapies take place in a group setting. Therefore, patients may form multiple therapeutic relationships: to different therapists, to other patients, and to the patient group as whole. This is different from dyadic outpatient therapy, where the only therapeutic relationship is between a patient and his/her individual therapist. Goal of the current research is the further development of a process scale for relevant aspects of therapeutic relationships in multimodal settings.

The new Inpatient and Day-clinic Experience Scale (IDES) was designed to assess common factors in therapy settings with a mixture of group and individual sessions. The goal was to create an instrument that is specific enough to capture unique aspects of the multimodal setting, but is broad enough to be used in more than one specific institution or health-care system. At the same time, the IDES is intended for use across different therapeutic orientations and independent of the specific compositions of treatment elements. Its main emphasis is on the assessment of relevant aspects of patients' multiple therapeutic relationships.

The IDES is based on a previous questionnaire, the Inpatient Experience Scale (IES; German: "Stationserfahrungsbogen"; Sammet & Schauenburg 1999). The IES had been developed to assess patients' experiences in inpatient psychotherapy and consisted of 38 items. The seven IES scales were derived from exploratory

factor analyses and showed adequate to good internal consistencies (Cronbach's  $\alpha$  .71–.85). They assessed the relationship with the individual therapist (4 items), relationship with the therapeutic team (7 items), group cohesion (5 items), group climate (7 items), therapeutic intensity (5 items), acceptance of rules (4 items) and self-efficacy (6 items). Even though some process-outcome studies have been published with the IES (e.g., Cropp et al. 2008; Dinger & Schauenburg 2010; Sammet et al. 2004; Uhlmann & Steinert 2008), the questionnaire suffered from several shortcomings. In the following section, we will outline five points that demanded further improvements.

First of all, no previously published study with the IES found significant correlations of the scales “treatment intensity” and “acceptance of rules” with therapy outcome, after controlling for the other scales. In other words, although the question of the ideal intensity or “dose” of therapy remains relevant for psychosocial interventions, the subjective experience of having “too many sessions” or receiving “too much feedback” (item examples for treatment intensity) did not explain outcome variation beyond the more relationship-focused aspects of the IES (group cohesion, group climate, individual therapist, relationship with team). The same was true for the scale “acceptance of rules,” which had been operationalized as the subjective experience that the therapeutic regimen was too strict. The absence of significant correlations with outcome of these setting-specific scales indicates that both scales were less central for understanding optimal conditions of change. It was therefore decided to delete these scales and instead focus on aspects of therapeutic relationships for the new questionnaire.

Next, the original scale “relationship with individual therapist” of the IES assessed mainly the bond aspect of the therapeutic relationship, but did not include agreement on tasks and goals. However, this agreement is an influential aspect of the working alliance in psychotherapy (Bordin 1979). Factor analyses of the Working Alliance Inventory in individual psychotherapy suggest that the factor “agreement” can be differentiated from a second factor “relationship” (Andrusyna et al. 2001; Hatcher & Gillaspay 2006; Mander et al. 2013; 2015). A study in outpatient cognitive therapy for depression found only agreement, but not therapeutic bond predictive for subsequent symptomatic improvement (Webb et al. 2011). It was therefore decided to add a new scale on agreement on tasks and goals to the new instrument.

A further point for improvement concerns the patients' contribution to the therapeutic relationships. When studying relationships as facilitators for therapeutic outcome, it seems reasonable to include a measure of the patients' general ability and willingness to engage in meaningful therapy relationships. If it is possible to distinguish between the patients' general engagement in therapeutic relationships and the relationship quality with a specific person (e.g., individual therapist), it might be possible to understand which aspect of therapeutic relationships is likely to lead to change. When searching the literature on previous work regarding the patient's contribution to therapeutic relationships, patient self-disclosure emerged as important prerequisite of therapeutic work. A patient who is open and comfortable to disclose personal information during sessions contributes to a pos-

itive working relationship. In addition, self-disclosure does not appear to be a stable personality trait, but may instead change over the course of treatment (Farber et al. 2004; Hill 2005). It was therefore decided that a new scale “self-disclosure” should be developed for the new instrument.

The next aspect of further improvement does not concern therapeutic relationships directly. The previous IES included a scale called “self-efficacy,” which measures the feeling that one can depend on his/her own abilities and is able to solve difficult situations (Bandura 1994). A study by Sammet and colleagues (2007) showed that an increase in self-efficacy was associated with a decrease of symptoms in inpatient psychotherapy. In addition, patients’ attachment styles were associated with self-efficacy, and early self-efficacy was related to relationship qualities in the multimodal setting. The study indicated that self-efficacy is a relevant aspect of process and outcome in this setting. At the same time, the inclusion of aspects of self-definition in addition to relationship characteristics accounts for the fundamental dimensions of relatedness and self-definition, which constitute normal as well as disruptive personality development (Luyten & Blatt 2013). However, a sense of self is not necessarily restricted to self-efficacy. Similarly, an increase in self-esteem, and/or a decrease of negative bias in self-evaluations might be beneficial (Conolly Gibbons et al. 2009; Strauman et al. 2001). To sum up, a scale measuring patients’ self-view was considered potentially useful. The original scale self-efficacy was revised in order to keep a scale on patients’ positive self-view, but to include aspects of self-evaluation in addition to self-efficacy in the new questionnaire.

The final point for improvement concerns the identification of treatment dropouts. Previous research with the IES showed that the scale did not sufficiently identify patients who were in a current treatment crisis. In addition to relationship aspects and self-view mentioned above, a scale assessing treatment dissatisfaction and thoughts about premature termination appeared potentially useful. Therefore, new items for a scale on patients’ critical attitude towards therapy were generated.

In order to fulfill the critical points mentioned above, the IDES was developed to assess relationship with individual therapist, relationship with therapeutic team, group cohesion, agreement on tasks and goals, self-disclosure, positive self-view, and critical attitude. The current study aims at the evaluation of the scale’s psychometric properties and reports preliminary associations with therapy outcome (OQ-45).

## 2. Methods

### 2.1. Participants

Participating patients were recruited at two sites in three separate samples. Sample 1 (470 patients) was treated with inpatient psychotherapy at the University of Tübingen, Germany. The sample included 66.9 % female patients, ranging in age from 17

to 73 years (mean = 41.0; SD = 14.10). Most frequent main treatment diagnoses<sup>6</sup> according to the International Classification of Diseases (ICD-10; (World Health Organization (WHO) 1992) were depressive disorders (33.3 %), followed by somatoform (25.4 %), eating (20.6 %), anxiety (11.9 %) and adjustment / posttraumatic stress disorders (4.4 %). Mean treatment duration for sample 1 was 42.5 days (SD = 11.94).

Sample 2 was treated with either day-clinic (N = 78) or inpatient (N = 222) psychotherapy at the University of Heidelberg, Germany. In this sample, 74.3 % patients were female, and age ranged from 17 to 68 years (mean = 35.2, SD = 11.65). Main treatment diagnoses according to ICD-10 were depressive (60.8 %), adjustment / posttraumatic stress (12.0 %), eating (9.0 %), anxiety (6.4 %), somatoform (5.7 %) and personality disorders (5.0 %). Mean treatment duration for the second sample was 51.2 days (SD = 18.03). Sample 1 and sample 2 were assessed at the end of their respective treatments, yielding one measurement per patient.

Sample 3 was also treated at the University of Heidelberg, Germany, with either day-clinic (N = 28) or inpatient (N = 23) psychotherapy. In this sample 65.4 % were female, age ranged from 19 to 63 years (mean = 34.2, SD = 12.47). Main treatment diagnoses according to ICD-10 were depressive (71.7 %), eating (13.2 %), anxiety (7.6 %), and somatoform disorders (5.7 %), treatment duration was 54.9 days (SD = 12.23). In contrast to samples 1 and 2, process ratings were assessed weekly for this sample, yielding 353 measurements.

## 2.2. Measures

*Inpatient and Day-clinic Experience Scale (IDES)*. As outlined in the introduction, the development of the new IDES was based on the IES (Sammet & Schauenburg 1999). In case of item deletion, we chose to keep items with the highest loading to the respective IES factor. In case of new items, preliminary items were suggested by one author (I. S.), tested and revised by two other authors (U. D., H. S.). Items for the new scale agreement on tasks and goals were based on the revised Working Alliance Inventory (Hatcher & Gillaspay 2006; Wilmers et al. 2008). Table 1 informs about the changes from the IES to IDES. The preliminary proposed new IDES included 28 items, with four items for each rational scale. The items are answered on a 6-point scale ranging from "1 = not at all true" to "6 = completely true." For each scale, one sample item is given. The scales are: *bond with individual therapist* (e.g., "It was easy for me to warm up towards my therapist"), *bond with therapeutic team* (e.g., "I maintained good contact with the therapeutic team"), *agreement on tasks and goals* (e.g., "Therapy made it clearer for me how I can change in order to reach my goals"), *cohesion with the patient group* (e.g., "I felt that I was a part of the patient group"), *self-disclosure* (e.g., "I expressed my feelings openly during my therapy sessions"), *critical attitude* (e.g., "Because of dissatisfaction with the course of treat-

<sup>6</sup> Treatment diagnoses in both institutions were assessed by the treatment providers in a non-standardized way after a comprehensive clinical intake evaluation.

Table 1: Development of the Inpatient and Dayclinic Experience Scale

Scale	IES (38 items)	Proposed IDES (28 items)	Final IDES (25 items)
Bond with individual therapist	4 items	4 items (unchanged)	4 items
Bond with therapeutic team	7 items	4 items (shortened <sup>a</sup> )	4 items
Group Cohesion	5 items	4 items (shortened <sup>a</sup> )	4 items
Self-efficacy / Self-view	6 items (self-efficacy)	4 items (revised into self-view) <sup>b</sup>	3 items
Acceptance of rules	4 items	not included	not included
Therapeutic intensity	5 items	not included	not included
Group Climate	7 items	not included	not included
Agreement on task and goals	not included	4 items (new) <sup>c</sup>	4 items
Self-disclosure	not included	4 items (new)	4 items
Critical attitude	not included	4 items (new)	2 items

Note. IES = Inpatient Experience Scale; IDES = Inpatient and Day-clinic Experience Scale; <sup>a</sup>For shortening purpose we omitted items with the lowest factor loadings of the original IES evaluation study (Sammet & Schauenburg 1999). <sup>b</sup>the revised self-efficacy scale includes new items on positive self-evaluation. <sup>c</sup>items for agreement on task and goals were based on the German version of the revised Working Alliance Inventory (Wilmers et al. 2008)

ment I have been thinking about terminating therapy”), and *positive self-view* (e.g., “Therapy made it clearer to me where my strengths are”). The time for answering the questionnaire varies between 5–15 minutes.

*Outcome Questionnaire (OQ-45)*. The OQ-45 was designed to assess patient functioning in the domains of psychological disturbance, interpersonal problems, and social role functioning. A total score is based on 45 items. Previous research showed that the scale is psychometrically reliable and valid (Lambert et al. 2010; Lambert & Shimokawa 2011). The German translation also showed reliability and validity, consistency was .93 for the total scale; re-test reliability was .88, correlation with validation instruments range between .58 and .75 (Lambert et al. 2002). In addition, the German version is sensitive to change throughout therapy (Haug et al. 2004). In the current study, consistency was .91 for the global scale.

### 2.3. Treatment settings

Three samples were recruited in two university hospitals. The Department for Psychosomatic Medicine and Psychotherapy in Tübingen provided the data for the exploratory analyses. Patients receive individual psychotherapy, as well as group, art, and music and body-oriented psychotherapy. Treatments are provided by an interdisciplinary team of mental health professionals. The treatment concept of the psychotherapy units at the Department for General Internal Medicine and Psychoso-

matics in Heidelberg is highly similar in terms of treatment components, but includes day-clinic patients that are treated together with inpatients on the same unit. Both institutions aim to integrate treatment elements of different theoretical schools (psychodynamic, cognitive, behavioral, systemic).

#### 2.4. Procedure

Participants were recruited during their day-clinic or inpatient psychotherapy in two participating sites and included after they gave informed consent. Participants in samples 1 and 2 filled out the IDES at the end of their psychotherapy, yielding one questionnaire per participant. Participants in sample 3 were recruited during the first week of therapy and asked to fill out the IDES at the end of each week during their stay. We chose week 3 as indicator for early process ratings, because this is most frequently done in the alliance-outcome literature in outpatient therapy (Barber et al. 2014; Horvath et al. 2011). In addition, participants in sample 3 filled out the OQ-45 at termination of therapy. The study was approved by the local ethics committee in Tübingen (29/2009BO2).

#### 2.5. Statistical analyses

For sample 1 (Tübingen) we calculated means and skewness of the theoretical scales and examined internal consistency (Cronbach's  $\alpha$ ) as indicator for reliability. In addition, sample 1 was used for an exploratory factor analysis (EFA). Based on the previous version and other process ratings instruments (Sammet & Schauenburg 1999; Webb et al. 2011), we expected to find significant intercorrelations between factors. EFA was carried out with oblique rotation, and was conducted with IBM SPSS 21 software. Number of factors was determined by eigenvalues greater than 1.0. Factor loadings were examined for cross loadings. We defined cross loadings as a minimum load of .3 on more than one factor. Based on the findings with sample 1, reconsiderations were made regarding specifications for the models tested in the confirmatory analyses.

Sample 2 served as sample for the confirmatory factor analyses (CFA), conducted with the statistical package Mplus using maximum likelihood estimation (ML). In order to examine model fit in the CFA, we evaluated goodness of fit using the comparative fit index (CFI), the Tucker–Lewis Index (TLI), the standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). For the CFI and the TLI, values greater than 0.95 constitute good fit, and values above 0.90 are seen as indicative of acceptable fit to the data (Bentler & Bonett 1980; Bollen 1989; Hu & Bentler 1999). A RMSEA close to 0.05 or below suggests a good fit to the data; values up to 0.08 indicate a reasonable error of approximation (Browne & Cudeck 1993; MacCallum et al. 1996; Steiger 1990). A SRMR between 0.00 and 0.05 indicates a good fit and between 0.05 and 0.10 an acceptable fit to the data (Hu & Bentler 1999).

Sample 3 was used to evaluate consistencies of the scales at multiple times throughout the treatment. In order to examine the degree of dependency for the repeated measure over time, we correlated those weeks that were furthest apart (week

1 and 8). Early process measurements (after week 3) were correlated with outcome at termination in order to explore the prognostic validity of the scales.

### 3. Results

#### 3.1. Reliability

Internal consistencies of the theoretically constructed scales in Sample 1 were assessed using Cronbach's  $\alpha$ . Table 2 shows the  $\alpha$  estimates. With the exception of the scale critical attitude, all scales demonstrated acceptable consistencies above .70. Mean values for all scales but critical attitude are high, reflecting a positive evaluation of the treatment.

Table 2: Reliability, means and skewness of rational IDES scales in the sample 1 (Tübingen,  $N = 470$ )

Scales	Cronbach's $\alpha$	Mean (SD)	Skewness (S. E.)
Bond with individual therapist	.80	4.9 (0.92)	-1.38 (0.11)
Bond with therapeutic team	.88	5.1 (0.79)	-1.55 (0.11)
Cohesion with patient group	.87	5.0 (0.93)	-1.48 (0.11)
Agreement on tasks and goals	.90	4.8 (0.97)	-1.28 (0.11)
Self-disclosure	.78	4.5 (1.03)	-0.82 (0.11)
Positive self-view	.84 [.85]	4.5 (1.01)	-0.82 (0.11)
Critical attitude	.66 [.60]	2.02 (1.19)	0.69 (0.11)

Note. SD standard deviation; S. E. standard error. Scores in [ ] indicate values for the final versions of the scales critical attitude and positive self-concept after deletion of items following cross-loadings in the factor analyses.

#### 3.2. Exploratory Factor Analysis

Data from sample 1 was used for EFA. We examined whether or not items from the theoretically constructed scales would load on one factor. Based on the eigenvalue of 1.0, the EFA resulted in six factors, explaining 67.8 % of the variance. When examining item loadings, factors 2–5 resembled the theoretical scales bond with team, self-disclosure, cohesion, critical attitude and bond with individual therapist. Factor 1, however, contained items that originated from the two theoretical scales positive self-view and agreement on tasks and goals. Correlations between factors ranged from -.20 to .47.

#### 3.3. Considerations for the final models

The originally proposed model included 28 items and 7 scales. As the EFA (sample 1) did not fully reproduce this model, four different models were tested with CFA in sample



2. These models differed with regard to number of factors (six vs. seven) and number of items (25 vs. 28). Concerning the number of factors, the EFA had shown expected item loadings for five of the rational scales, but items from the scales “positive self-view” and “agreement on tasks and goals” loaded on one factor together. When examined separately, both rational scales had high internal consistencies. Because the theoretical concepts seemed distinct and valuable, we decided to compare a 6-factor solution with a 7-factor solution in the CFA. In the 6-factor solution, items from “positive self-view” and “agreement on tasks and goals” were grouped together, while the 7-factor solution included the 7 rational scales as factors. Concerning the number of items, we examined cross loadings in the EFA. Cross loadings above .3 were considered critical. Item 6 (“Behavior or attitude of therapeutic staff was questionable”) originated from the theoretical scale “critical attitude” (factor loading .48), but also showed high loading on the factor “bond with therapeutic staff” (.47). Item 24 (“I wish that the therapists would acknowledge my progress and efforts more often”) loaded on “critical attitude” with .42, but also loaded on “bond with individual therapist” (–.33). Finally, item 28 (“I could use my own abilities in therapy”) stemmed from the theoretical scale positive self-view (factor 1 loading .31), but loaded even higher on the factor self-disclosure (.58). Because of these loadings, a 28-item version was compared with a 25-item version without items 6, 24, and 28. In the 25-item version, the scale “positive self view” had only 3 items, and the scale “critical attitude” had only 2 items.

### 3.4. Confirmatory Factor Analysis

For the CFA, no cross loadings or residual correlations were allowed. Table 3 summarizes the fit statistics for the four different models in sample 2. All models showed at least moderate fit to the sample 2 data. Fit indices were most optimal for the 7-factor solution with 25 items. This indicates that the 25 items can be viewed as an adequate operationalization for the proposed seven scales.

Table 3: Goodness of fit statistics for 4 versions of the IDES in sample 2

	$\chi^2$	CFI	TLI	RMSEA	SRMR
1. Model 1	28 items; 6 factors	587.98	0.912	0.900	0.050
2. Model 2	28 items; 7 factors	542.21	0.925	0.914	0.046
3. Model 3	25 items; 6 factors	452.18	0.925	0.914	0.050
4. Model 4	25 items, 7 factors	414.99	0.937	0.926	0.046

Note. CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.

### 3.5. Longitudinal assessments

Table 4 shows consistencies and test-retest correlations in sample 3. When examined separately in weeks 1 through 8, consistencies for most IDES scales were adequate (> .70). Exceptions were the scale “bond with individual therapist” and “critical at-

Table 4: IDES consistencies, test-retest as well as correlation with symptomatic outcome in sample 3 (Heidelberg, N = 51)

Scales	Cronbach's $\alpha$ (range for separate weeks)	$r_{tt}$	$r_{Outcome}$
Bond with individual therapist	.63 (.38–.77)	.40*	.20
Bond with therapeutic staff	.83 (.71–.91)	.28 <sup>+</sup>	.11
Cohesion with patient group	.82 (.77–.87)	.55**	–.22
Agreement on tasks and goals	.86 (.80–.93)	.59**	–.32*
Self-disclosure	.84 (.77–.89)	.44**	.05
Positive self-view	.89 (.81–.94)	.53**	–.26 <sup>+</sup>
Critical attitude	.53 (.34–.63)	.13	.21

Note. Consistencies are depicted across weeks (n = 353 measurements); in addition the range between separate weeks is given in brackets;  $r_{tt}$  = test-retest correlation between IDES scales week 1 and week 8;  $r_{outcome}$  = correlation between IDES scales week 3 with OQ-45 scores at termination. \*\*p < .01, \*p > .05, +p > .10.

titude” with somewhat lower scores. Test-retest reliability from week 1 to 8 varied between scales. Relationship with therapeutic team had the lowest stability over this period ( $r_{tt} = .28$ ), while agreement on task and goals appeared most stable ( $r_{tt} = .59$ ). The correlations of IDES scales at week 3 with outcome (OQ-45) showed small to moderate associations compared to Cohen's (1988) classification of effect sizes with  $r = .10$  representing small and  $r = .30$  moderate effects. Contrary to expectations, self-disclosure at week 3 did not correlate with outcome at termination in this sample ( $r = .05$ ), and bond with individual therapist and therapeutic team showed non-significant associations in the opposite direction ( $r = .20$  and  $r = .11$ ). Cohesion, agreement, and evaluations of self-view at week 3 were moderately associated with fewer symptoms at terminations.

#### 4. Discussion

The aim of this study was to introduce the new IDES and examine its psychometric properties. The proposed scales showed moderate to high consistencies and were confirmed as empirical factors with small changes. Moderate correlations were observed for the therapy process as assessed with the IDES and therapy outcome.

In addition to the observed moderate to high consistencies, reliability analyses indicated skewness of the data. This is common for psychotherapy process instruments (Flückiger et al. 2010; Webb et al. 2011). Together with previous studies, this finding underlines the difficulties in differentiating between different degrees of process factors that patients perceive generally positively. Apparently (and luckily!), most patients experience their therapeutic relationships as positive. However, the rupture-repair research (Safran et al. 2011) describes important micro-ruptures during a therapy session

which may not appear in global session reports, where the average alliance of the last session is described as positive. Therefore, the problem of skewed process measures can be understood as one of the general challenges for future research.

Model 4 with seven factors and 25 items showed the best fit to the data. The CFA confirmed the proposed factor structure. This was true even though the EFA had detected only 5 of the 7 proposed theoretical scales in an explorative analysis, while items from “positive self-view” and “agreement on tasks and goals” loaded on one factor. The decision to keep and test both scales as separate factors was based on theoretical reasons. Both constructs are conceptually distinct and appear theoretically relevant for the therapeutic process. In theory, it is possible to have a positive self-view, and at the same time either agree with a therapist about the tasks and goals of treatment or to have a different opinion. This theoretical perspective on the independence of both constructs was confirmed by the CFA in sample 2. Because of the empirical overlap in one of the samples, future studies should continue to test this potential overlap in different samples and over time.

Compared to the original IES with 38 items, the new IDES is substantially shorter. Of the proposed 28 items, 25 items were retained for the final version. In addition to the lower number of items, the weight of each factor is similar. Five scales are represented by four items; one scale is represented by three items; and one scale is represented by two items only. While short scales facilitate repeated routine measurements, very brief scales have the potential disadvantage of lower reliabilities. In the current IDES, most consistencies are satisfactory despite their shortness. However, the consistency of the very brief scale “critical attitude” with only two items is problematic. Compared to the original version, only the scale “bond with individual therapist” remained unchanged. The scales “cohesion,” “bond with therapeutic team” and “positive self-view” were shortened and revised. In addition, the IDES contains three new scales: “agreement on tasks and goals,” “self-disclosure,” and “critical attitude.” Correlations of these scales with symptom level at therapy termination serve as first indicator that the new variables may be relevant for understanding optimal conditions for change. However, the observed associations in sample 3 are only small to moderate in size, and several scales at week 3 did not correlate significantly with OQ termination scores in sample 3. It seems likely that patient factors will be moderators of process outcome associations (e.g., Dinger & Schauenburg 2010). Future prospective studies with early IDES measurements will show whether or not the proposed process factors precede symptomatic change or if, vice versa, better symptomatic improvement leads to better process ratings. Especially for the new scale “critical attitude,” an additional outcome criterion will be therapy drop-out. In case the scale can predict premature termination, it might prove useful for practitioner contexts and psychotherapy hospitals. Because of the high clinical relevance of identifying potential drop outs, more studies are needed in order to answer this question (Brockmann et al. 2011). Therefore, the scale “critical attitude” was kept despite the somewhat lower internal consistency with only two items.

Limitations of the study include the sample size and selection of patients. While common rules of thumb recommend a minimum sample sizes of 300 participants

for factor analyses (Boylan 2011), larger samples are needed for questionnaires with more than four factors. The factor structure in this study was tested in two samples of 470 (for EFA) and 300 patients (for CFA). The sample size as well as patients' diagnoses differed between sites, and sample 1 did not include patients in day-clinic psychotherapy. While the smaller sample size of day-clinic patients limits generalizability to this setting, the use of separate and heterogeneous samples constitutes a conservative test of the model fit. A further limitation is the time point for the assessment. Although the IDES is designed as a process instrument with a recommended frequency of weekly measurements, patients in samples 1 and 2 answered the questionnaire at the end of therapy. However, reliabilities in sample 3 were similar across different measurements throughout therapy. An additional limitation concerns the preliminary state of research on aspects of validity. For correlations between early IDES at week three and outcome only the OQ-45, but no other outcome instrument was available. In addition, no similar instruments were available for analyses of convergent validity. Further studies are needed for three reasons: (1) the inclusion of more day-clinic patients; (2) for comparisons with similar instruments for convergent validity (Delsignore et al. 2013; Schiepek et al. 2012); (3) for the untangling of prior symptom change and process evaluations. It is further important to keep in mind that the presented findings apply for the German version only. An English translation of the questionnaire is available, but hasn't been examined for its psychometric characteristics so far. Both versions can be obtained from the first author and may be used freely for scientific purposes.

## 5. Summary

The IDES is a psychotherapy process instrument, assessing common factors in inpatient and day-clinic psychotherapy. The final version of the questionnaire includes 25 items, which form seven scales. Confirmatory analyses support the proposed factor structure, the instrument can be used for further studies on process in day-clinic and inpatient psychotherapy.

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