When, Why and How do Patients Change in Psychological Treatments

Wolfgang Lutz
(University of Trier)

http://www.kpplutz.uni-trier.de
„Psychotherapy is an undefined technique applied to unspecified problems with unpredictable outcome. For this technique we recommend rigorous training“.  

Participant of the Boulder Conference on Training in Psychotherapy (Raimy, 1950)
„No form of therapy has ever been initiated without a claim that it had unique therapeutic advantages. And no form of therapy has ever been abandoned because of its failure to live up to these claims.“

Morris B. Parloff (1968)
Until now, most medical treatments have been designed for the “average patient.” As a result of this “one-size-fits-all” approach, treatments can be very successful for some patients but not for others. Precision Medicine, on the other hand, is an innovative approach that takes into account individual differences ...
Imagine you finished your clinical training program and you work already a few years. How good are you as a therapist in relation to other therapists?

Estimate your position in relation to other therapists on a scale from 0 to 100.

0 would be the weakest therapist, 100 would be the best therapist.
Better-than-average Effect (BTA)

- Therapists estimate themselves on the 80th percentile.
- Nobody saw himself/herself below the 50th percentile.

Walfish, McAlister, O'Donnell and Lambert (2012)
Hannan, Lambert, Harmon, Nielsen, Smart, Shimokawa, et al. (2005)
Aggregated Dataset
N= 48,648 (patients); N=1800 (therapists)

Many thanks to Michael Barkham, Jaime Delgadillo, Michael Lambert, Dietmar Schulte, Ken Howard, & Mark Kopta
Distribution of therapist effects in an aggregated dataset of 3 countries and 8 datasets
N= 48648 (patients); N=1800 (therapists)

<table>
<thead>
<tr>
<th>Therapist effect</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 6.7%</td>
<td>= .54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most effective</th>
<th>Ø</th>
<th>Least effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.78% (302)</td>
<td>67.06% (1207)</td>
<td>16.17% (291)</td>
</tr>
</tbody>
</table>
• The psychometric assessment and feedback of psychological change could/should become part of clinical practice in order to support the delivery of psychological interventions. (treatment planning, tracking adaptation and training)

• Modern tools developed in the context of eMental Health/Feedback research can help to realize this.

• But the decision about the clinical validity of the so delivered additional information should stay in the hands of a scientifically well-trained therapist.

• Replication: Several datasets could be used for validation – we have to deal with large patient and setting variation.
When, how and why do people change through psychological interventions -- Human Change Through Psychotherapy Program (HCTPP)

- Research topics within the Clinical Psychology and Psychotherapy Section at the University of Trier /Center for Psychotherapy and Psychotherapy Research

- **From the macro- to the micro-level of change in psychological treatments**
  - 1. macro-level:
    - Patient or client-focused psychotherapy research/prediction of change/feedback
  - 2. meso-level:
    - Discontinous treatment courses and underlying processes/factors
  - 3. micro-level:
    - Therapeutic micro-strategies

- Outpatient center and clinical training program, PhD program „Psychotherapy Research“ and research oriented focus in the master program „Clinical Psychology“
ROM at the University of Trier, CBT training program
Therapieverlauf

Patientendetails

STATUSREPORT

<table>
<thead>
<tr>
<th>Erhebung</th>
<th>Datum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z10</td>
<td>2012-03-06</td>
</tr>
<tr>
<td>Z96</td>
<td>2011-10-27</td>
</tr>
<tr>
<td>PR</td>
<td>2011-08-20</td>
</tr>
<tr>
<td>WZ</td>
<td>2011-05-02</td>
</tr>
</tbody>
</table>

VERLAUFSSREPORT

<table>
<thead>
<tr>
<th>Letzte Erhebung</th>
<th>Datum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z10 (og30)</td>
<td>2012-03-06</td>
</tr>
</tbody>
</table>

FEEDBACK (TEST)

Feedback ÖQ

Graphische Darstellung von Daten.
1. **Treatment Selection Tool (Prediction: PAI, NN)**
   - Is the treatment which is effective for the average patient also effective for this specific patient?
   - Which treatment strategy is best for this specific patient?

2. **Treatment Adaptation Tool (ROM, Early Response, Sudden Gains/Losses)**
   - Is the ongoing treatment successful for this patient?
   - Is this patient at risk for treatment failure?
1. Personalized Predictions of Treatment Effects: Differential Predictions and Nearest Neighbors

- Individual predictions based on their nearest neighbors

- Two homogeneous subsamples of the 30 nearest patients were selected for a CBT oriented treatment group and an integrative CBT and interpersonal oriented treatment group and Growth Curve Modeling was conducted on those two groups for each patient

N=619 (Inventory of Emotional Distress (EMI))

Site 1: N= 359 Outpatient Clinic at the University of Berne (Integrative Cognitive-Behavioral and Interpersonal Focus)

Site 2: N=260 Outpatient Clinic at the University of Bochum (Cognitive-Behavioral Focus)


Nearest Neighbors (NN)

Predictors:
- BSI
- IIP

25% nearest cases to the target or Euclidean Distances
A Patient with a Diagnoses of Anxiety & Depression – Treated with CBT +IPT Therapy

A Patient with a Diagnoses of Anxiety – Treated with CBT

Examples

<table>
<thead>
<tr>
<th>Session</th>
<th>T-Score</th>
<th>Observed Score</th>
<th>Expected CBT</th>
<th>Expected Integ. Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (mean)</th>
<th>Gender</th>
<th>Diagnoses</th>
<th>Distance (mean)</th>
<th>Goals</th>
<th>SE</th>
<th>Reliable Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 (1.2)</td>
<td>Female</td>
<td>5 Anx., 10 Depr., 1 Com.</td>
<td>11 P 14 I 3 W 2 O 9 S</td>
<td>6.2</td>
<td>+ 26 +/- 3 - 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Integrative Therapy (n=30)</th>
<th>CBT (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40.4 (2.7)</td>
<td>41.1 (3.3)</td>
</tr>
<tr>
<td>15 weibl.</td>
<td>19 weibl.</td>
</tr>
<tr>
<td>8 Angst 2 Depr. 2 Kom.</td>
<td>18 Angst 2 Depr. 9 Kom.</td>
</tr>
<tr>
<td>8.7 (1.4)</td>
<td>8.4 (1.8)</td>
</tr>
<tr>
<td>9 P 13 I 3 W 1 O 6 S</td>
<td>21 P 6 I 10 W 5 S</td>
</tr>
<tr>
<td>5.7</td>
<td>4.6</td>
</tr>
<tr>
<td>+ 15 +/- 13 - 2</td>
<td>+ 19 +/- 7 - 4</td>
</tr>
</tbody>
</table>
Wakefield Metropolitan District (UK)
204 clients, session-by-session with the CORE-SF (18 items)


Motivation-oriented or problem-solving strategies within the first 10 sessions


- **Motivation-oriented strategy**
  - Focus on motivation, relationship and positive affect/gradient

- **Problem solving strategy**
  - Focus on problem solving

Randomisation

**Development Sample**
- All patients
  - Low in problem-solving
  - High in alliance + activation of resources

**Validation Sample**
- All patients
  - High in problem-solving
  - Low in alliance and activation of resources

N = 462 patients, 60.1% female; M = 37.03 years (SD = 12.31)
41.1% affective disorders; 8.9% anxiety disorders; 34.8% mixed affective and anxiety disorders mixed; 15.8% others

N = 234

N = 228
Observed advantage of treatment selection in validation sample

\[ d = 0.31; \ p < .05 \]

Only those with 0.5 SD difference in predictions

\[ d = 0.93; \ p < .05, \text{ Huibers} \]

Therapist effect on outcome (corrected after initial impairment); 9.8%, d= .66

Multilevel-Model
Saxon & Barkham, 2012, JCCP.; Baldwin & Imel, 2013

Level 1: Symptoms_{ij} = \beta_{0i} + \beta_{1i} \cdot \text{Symptoms}_{preij} + e_{ij}

Level 2: \beta_{0i} = \gamma_{00} + r_{0i}; \beta_{1i} = \gamma_{10} + r_{1i}

N= 751 Patienten
N= 177 Therapeuten

Therapist ranked from most to least effective

BSI = 1.87;
-> R^2 = 38.29%; ES = 1.56

BSI = 1.21
-> R^2 = 12.22%; ES = .75

BSI = 1.14;
-> R^2 = 9.8%; ES = .66

BSI = .55;
-> R^2 = .02; ES = .08

BSI General Symptom Index zu Therapiebeginn
Therapist effects on Outcome, Treatment Length, Drop-out (TK-Study, Outpatient Center Trier) in ES

N=349 patients and 44 therapists at least 5 cases

N=277 patients and 54 therapists at least 5 cases

larger ES = better outcome, less drop-out, shorter treatments

No correlation between therapist Effects in outcome and length
Nearest Neighbors von 4554P14
Nearest Neighbors von 4554P14

Network Analysis
2. Treatment Adaptation Tool (Early Response, ROM)

Depression: 61.1% „Early Responder“

- ER seems to exist in different settings, diagnosis, treatments and instruments
- ER groups have high treatment effects. ED seem to have a negative prognosis
- in naturalistic studies ER have shorter treatments / in RCT`s ER are those which finish the manual.

Panic disorder: 20.2% „Early Responder“

Treatment outcome and length of the different early change groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Reliable improvement (%)</th>
<th>ES change in PDSS-SR during treatment (d) [95% CI]</th>
<th>3–5 (%)</th>
<th>6–10 (%)</th>
<th>11 (%)</th>
<th>Mean number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients</td>
<td>326</td>
<td>48.8</td>
<td>1.02 [0.85, 1.19]</td>
<td>10.1</td>
<td>13.2</td>
<td>76.7</td>
<td>9.87</td>
</tr>
<tr>
<td>Class 1</td>
<td>15</td>
<td>0*</td>
<td>-0.49 [-1.22, 0.26]</td>
<td>20</td>
<td>20</td>
<td>60</td>
<td>9.2</td>
</tr>
<tr>
<td>Class 2</td>
<td>189</td>
<td>37.6*</td>
<td>0.73 [0.51, 0.94]</td>
<td>6.9</td>
<td>14.3</td>
<td>78.8</td>
<td>10.04</td>
</tr>
<tr>
<td>Class 3</td>
<td>56</td>
<td>46.4</td>
<td>1.00 [0.58, 1.41]</td>
<td>19.6*</td>
<td>17.9</td>
<td>62.5</td>
<td>9.02</td>
</tr>
<tr>
<td>Class 4</td>
<td>66</td>
<td>93.3*</td>
<td>2.11 [1.61, 2.60]</td>
<td>9.1</td>
<td>4.5</td>
<td>86.4</td>
<td>10.29</td>
</tr>
<tr>
<td>p</td>
<td></td>
<td>&lt;.001*</td>
<td>&lt;.001*</td>
<td>&lt;.001a</td>
<td>&lt;.001b</td>
<td></td>
<td>.007b</td>
</tr>
</tbody>
</table>

Class 1: Early deterioration
Class 2: Medium symptoms – slow change
Class 3: High symptoms – no change
Class 4: Early response

**Early responder** show the highest pre-post effect sizes and the highest probability to complete the treatment. **Nonresponder** (class 3) and **deteriorater** (class 1) show high probabilities for drop-out.

Lutz, W., Hofmann, S. et al. (2014). JCCP.
Psychometric feedback

- Reduces the number of non-responding patients
- Patients that go „off-track“ have a higher chance to profit
- Effects can be further enhanced with clinical support or problem solving tools

Lambert (2016)
What do therapists do with feedback? - depending on feedback type

Due to the feedback, I... (multiple choices possible; 701 responses on N = 394 patients)

- discussed with the patient his/her answers in the questionnaire (n=200)
- tried to assist the patients resources (n=103)
- tried to adjust my therapeutic interventions (n=95)
- discussed with the patient his/her interpersonal problems (n=84)
- prepared the end of the therapy (n=73)
- tried to enhance the patients motivation for therapy (n=40)
- varied the intervals between sessions (n=35)
- tried to enhance the therapeutic alliance (n=30)
- consulted additional sources of help (e.g. supervision, intervision, literature, further education etc.) (n=23)
- tried new homework with the patient (n=18)

Due to Feedback...

- no modifications (149, 30%)
- modifications (352, 70%)

2x3 Chi² (df=2)
* p < .05
** p < .01
What do therapists do with feedback?

If modifications were made: Due to the feedback, I…

- discussed with the patient his/her answers in the questionnaire. (66.5%)
- tried to assist the patients resources. (34.9%)
- tried to adjust my therapeutic interventions. (39.5%)
- discussed with the patient his/her interpersonal problems. (30.1%)
- prepared the end of the therapy. (26.1%)
- tried to enhance the patients motivation for therapy. (18.5%)
- varied the intervals between sessions. (13.9%)
- tried to enhance the therapeutic alliance. (26.1%)
- consulted additional sources of help (e.g., supervision, intevention, literature, further education etc.). (27.7%)
- tried new homework with the patient. (6.5%)
- other. (8.2%)

* p < 0.5

Outpatient clinic Trier

TK-project
Differential Effects of therapist attitudes towards and usage of feedback

**Attitude towards feedback**

- **Amount of modifications due to Feedback**

- **How satisfied are you with the QM project?**

---

### Patients’ evaluations of outcome monitoring

<table>
<thead>
<tr>
<th>Question</th>
<th>n</th>
<th>Completely right</th>
<th>Rather right</th>
<th>neither / nor</th>
<th>Rather wrong</th>
<th>Completely wrong</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like the idea of having a project monitoring the quality of outpatient psychotherapy.</td>
<td>597</td>
<td>374 (62.6%)</td>
<td>177 (29.6%)</td>
<td>41 (6.9%)</td>
<td>3 (0.5%)</td>
<td>2 (0.3%)</td>
</tr>
<tr>
<td>I find it important to monitor the results of psychotherapeutic treatments.</td>
<td>597</td>
<td>399 (66.8%)</td>
<td>156 (26.1%)</td>
<td>30 (5.0%)</td>
<td>8 (1.3%)</td>
<td>4 (0.7%)</td>
</tr>
<tr>
<td>The time I needed to answer the questions was appropriate.</td>
<td>597</td>
<td>389 (65.2%)</td>
<td>181 (30.3%)</td>
<td>14 (2.3%)</td>
<td>12 (2.0%)</td>
<td>1 (0.2%)</td>
</tr>
</tbody>
</table>

About 40% of patients experience a gain, which makes about 51% of overall change.
Change rate with sudden gain: 79%, without: 41%.
Follow-up scores (at 6 or 18 Mt.) are significantly better (Tang & DeRubeis, 1999; 2005).
Sudden gains occur in CBT & supportive therapy and under routine clinic conditions (Hardy, 2005; Stiles et al., 2004).
Sudden losses have been rarely investigated.

Current study – Types of alliance ruptures

Eubanks-Carter, Muran und Safran (2009)
Rupture Resolution Rating Manual (3RS)

• **Confrontation Ruptures**
  (unsettled complaints about the therapist, the therapy, the progress in therapy, the basic conditions, etc.)

• **Withdrawal Ruptures**
  (covered problems in the relationship in terms of the patient’s efforts of avoidance, lack of cooperation, etc.)

• **Resolution Strategies** of the therapist
  (non defensive, open handling of problems in the therapeutic relationship)

Manualized, rater training for 4 days, seven raters, satisfactory agreement between 42-90% depending on category (Ehrlich & Lutz, 2015).
Current study – Patients N=88


<table>
<thead>
<tr>
<th>Type of rupture</th>
<th>Presence</th>
<th>Type of session (%)</th>
<th>X²</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>„Gain“</td>
<td>„Loss“</td>
<td>neutral</td>
<td></td>
</tr>
<tr>
<td>Withdrawal</td>
<td>Yes</td>
<td>84</td>
<td>79</td>
<td>68</td>
<td>2,13</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>16</td>
<td>21</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Confrontation</td>
<td>Yes</td>
<td>12</td>
<td>42</td>
<td>45</td>
<td>7,88</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>88</td>
<td>58</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Withdrawal and Confrontation</td>
<td>Yes</td>
<td>12</td>
<td>42</td>
<td>32</td>
<td>5,29</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>88</td>
<td>58</td>
<td>68</td>
<td></td>
</tr>
</tbody>
</table>

> SG less confrontation ruptures; SL, N more frequent
> withdrawal more frequent overall
> Resolution strategies: SG illustrate their rationale for treatment more clearly and respond significantly more to interaction problems with the adaptation of tasks and goals
Feedbackportal – Identification of Signal Clients (ASC)
Feedback on patient progress

- Risktool (suicidal ideation, substance abuse)
- Motivation/Treatment Goals
- Therapeutic Relationship (ruptures)
- Emotion Regulation/Problem Solving
- Social Support
- Life Events
- Congruence (How well are you/is your patient/getting along?)

German Research Foundation: DFG LU 660-10/1
Therapist effects exist in clinical practice for treatment outcome, treatment length and drop-out. The influence of the therapists seems to be more important as more impaired patients are.

Psychometric assessment and feedback could/should become part of clinical practice and support the delivery of psychotherapy (treatment planing, tracking and adaptation). Feedback on treatment progress seems to improve therapy, especially for those with an early negative development. -> part of training

Patients have a positive attitude to the evaluation of treatment results/feedback. The active and self-organised handling of problems is supported. Therapists attitude towards and handling of feedback seem also to influence the effects.

Discussion - What does this mean for research and practice?
• Early response: It seems there are patients, which are coming at the right time to the right place and those respond very fast to therapy. Responsible here is probably a specific patient X life event interaction.

• Prediction of differential effects and differential patient progress: It seems a subgroup responds to specific treatment manuals another maybe to extended integrative clinical programs-> but this needs further investigation -> methodological and measurement problems with differential effects.

• Examples of how to implement research results directly into clinical support tools, blended approaches, available online and on-time, one way to bridge the scientist-practitioner gap

• More research on inter-individuel differences over the course of treatment and as well as the dynamic adaptation of treatments

Discussion - What does this mean for research and practice?