Review of the Helsinki Psychotherapy Study findings on outcome and suitability of short- vs. long-term psychotherapy

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Background of the study

In mid 1990's

- The rise of evidence-based medicine, psychotherapy
- No evidence to back up the use of long-term psychodynamic psychotherapy vs. shorter therapies, based on randomized clinical trials – research interests
- In Finland, the majority of practising psychotherapists and training programs were based on the psychoanalytic/dynamic tradition
- Long-term therapies subsidized by social insurance to prevent and improve work disability – national service system interests

The initial interest

- What is the effectiveness and cost-effectiveness of long-term vs. short-term therapy?

The role of short- and long-term therapies among Finnish psychotherapists in 2011 (N=2 366)

Orientation of therapy	%
• **Psychodynamic/-analytic**	**55**
• Family therapy	36
• Cognitive, cognitive-behavioral, -analytic	20
• Crisis oriented, trauma and solution-focused	16
• Other	9
Typical duration of therapy	
• Short-term (less than 1 year)	18
• **Medium or long-term (more than 1 year)**	**48**
• Mixed	34

(Valkonen et al. Social Insurance Institution, Finland, 2011)

Great increase in the proportion of psychotherapist training programs beginning between 2012-2017 in cognitive and integrative orientations, psychodynamic programs reduced significantly

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The Helsinki Psychotherapy Study (HPS)

Administration, co-operating institutions and researchers

- Carried out at the National Institute for Health and Welfare (THL, Health Department) in co-operation with
  - the Social Insurance Institution of Finland
  - the Biomedicum Helsinki
  - Hospital District of Helsinki and Uusimaa / Psychiatry
  - Rehabilitation Foundation
  - Several collaborating researchers
- A total of about 250 persons have had some professional role in the study
- Administration and key researchers at present: Adj. Prof. Olavi Lindfors (project director), Prof. Paul Knekt (director emeritus, research manager), Adj. Prof. Tommi Härkänen (research manager), Esa Virtala (data manager); Timo Maljanen (senior researcher), Dr. Erkki Heinonen (researcher)

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Helsinki Psychotherapy Study (HPS)

- **Aim:** To evaluate the comparative effectiveness, sufficiency and suitability of psychotherapies.
- **Study design:** Randomized clinical trial combined with a quasi-experimental outcome study and a non-randomized cohort (prediction) study.
- **Data:** A total of 367 outpatients suffering from depressive (82%) or anxiety disorder (43%) and 71 therapists from the Helsinki area.
- **Treatment:** Four different forms of psychotherapy.
- **Follow-up:** Start of treatments 1995-2000. Follow-up continued 10 years from start of treatment. A total of 15 repeated measurement occasions were performed during the follow-up.
- **Measures of effectiveness:** Standard measures, different outcome dimensions.

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Forms of therapy

Therapy	Frequency of sessions	Number of sessions	Length of therapy
Solution-focused therapy (SFT)	1 session every 2nd or 3rd week	12	≤ 8 months
Short-term psychodynamic psychotherapy (SPP)	1 session a week	20	5–6 months
Long-term psychodynamic psychotherapy (LPP)	2-3 sessions a week	240	2–3 years
Psychoanalysis (PA)	4 sessions a week	640	5 years

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Inclusion and exclusion criteria

Eligible patients

- 20-45 years of age
- Anxiety or depressive disorder (DSM-IV)
- Long-standing (> 1 year) disorder causing dysfunction in work ability

Exclusion criteria

- Psychotic disorder, severe personality disorder, bipolar I disorder or adjustment disorder
- Organic brain disease or mental retardation
- Alcohol or substance abuse
- Treated with psychotherapy within the previous 2 years

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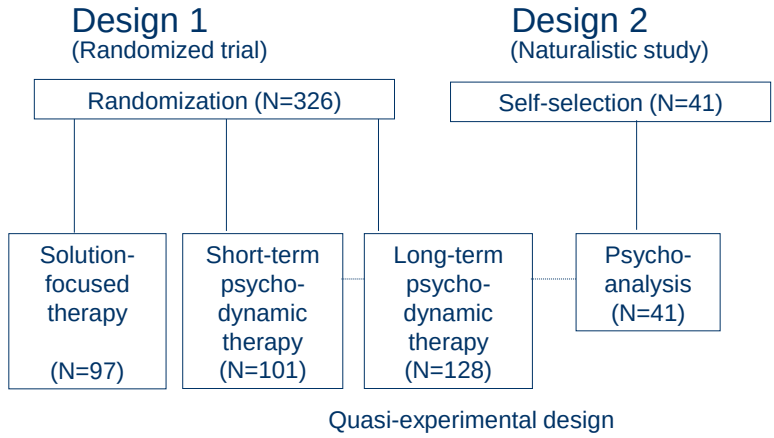
Effectiveness: Study designs



Quasi-experimental design

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Successfulness of randomization

Baseline characteristics of the 326 patients by treatment group.

Characteristic	SPP (n=101)	LPP (n=128)	SFT (n=97)	P-value for difference
Socio-economic variables				
Age (years)	32.1	31.6	33.6	**0.08**
Males (%)	25.7	21.1	25.8	**0.63**
Living alone (%)	48.5	49.2	56.7	**0.44**
Academic education (%)	19.8	28.1	28.9	**0.26**
Psychiatric diagnosis and symptoms				
Mood disorder (%)	78.2	88.3	86.6	**0.09**
Anxiety disorder (%)	49.5	36.7	46.4	**0.12**
Personality disorder (%)	24.8	12.5	18.6	**0.06**
Symptom Check List, Global Severity Index (SCL-90-GSI)	1.26	1.27	1.31	**0.84**
Symptom Check List, Anxiety scale (SCL-90-Anx)	1.25	1.19	1.27	**0.65**
Beck Depression Inventory (BDI)	17.9	18.8	18.1	**0.67**
Personality functions				
Quality of Object Relations Scale (QORS) (% low)	38.6	38.3	46.4	**0.41**
Defense Style Questionnaire (DSQ), immature style	3.92	3.93	3.94	**0.70**
Inventory of Interpersonal Problems (IIP)	86.5)	82.8	91.2	**0.13**
Self-concept (SASB), Affiliation (AF)	2.28	8.25	6.60	**0.76**
Self-concept (SASB), Autonomy (AU)	-24.7	-29.5	-25.4	**0.56**

Knekt & Lindfors 2004

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Therapists' background

- 71 therapists
- Mean age: 49 years (SD 6.6)
- Women: 69%
- Professional background
  - Psychologist: 72%
  - Psychiatrists 11%
  - Other 17%
- General therapy experience 17 years (SD 6.0)
- All therapists qualified to practice the therapy they provided

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Data collection in 1995-2014

Point in time	*Measurement*			
(month)	Questionnaires	Interviews (video recorded)	Tests (psychological & laboratory)	Registers
0	X	X	X	X
3	X			X
7	X	X		X
9	X			X
12	X	X		X
18	X			X
24	X			X
36	X	X	X	X
48	X			X
60	X	X	X	X
72	X			X
84	X	X		X
96				X
108				X
120	X			X

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Participation at different phases of follow-up

- During the 5-year follow-up 78-94 % of patients participated
- At the 10-year follow-up 51-78% participated
- Reasons of dropout from measurements
  - Disappointment to study treatment
  - Attending follow-up considered as stressful
  - Life situation
  - Not known
- When non-participation was not randomly distributed (non-ignorable)
  - Use of information from previous or following measurements
  - Use of information from other patients
  - Use of register information (e.g. use of psychotropic medication)

Effectiveness study: outcome measures

- **Psychiatric symptoms and diagnosis** (BDI, SCL-90, HDRS, HARS, Target Complaints; DSM-IV)
- **Need for psychiatric treatment** (medication, therapy, hospitalization)
- **Working ability** (Work Ability Index, SAS-work, PPF, Sick leave)
- **Social functioning** (SAS-SR, LOT, SOC, LSS)
- **Personality functions** (LPO, DSQ, IIP, QORS, SASB)
- **Lifestyle and somatic health** (smoking, BMI, alcohol consumption, leisure time exercise, serum cholesterol)
- **Cost-effectiveness** (direct and indirect costs vs. effects)

Development of measures and outcome criteria within HPS

- **Remission**
  - At least 50% reduction of symptoms OR
  - Attainment of a level below clinical cut-off (standard criteria)
- **Extended Remission**
  - Remission and no considerable auxiliary treatment
    (i.e. Psychotropic medication ≥ 1 year OR Therapy ≥ 20 sessions OR Psychiatric hospitalization)
- **Use of factor analysis condensing information**
  - Combining scores from similar outcome domains
  - Specification of different dimensions of outcomes (e.g. dimensions of childhood adversity)
- **Construction and validation of interview scales**
  - Suitability for Psychotherapy Scale (SPS) (Laaksonen et al. 2012)
  - Level of Personality Organization (LPO) (Valkonen et al. 2011)

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ITT vs AT -analyses

- Intention-to-treat (ITT) analysis
  - Statistical analysis concerns all patients randomized to treatments.
  - All patients are followed throughout the follow-up, to reduce bias.
  - **Deviation from study protocol (i.e., refusal of treatment, dropout, missed treatment sessions, auxiliary treatments etc.) are <u>not acknowledged</u> in the analysis.**
  - ITT results are reported to avoid bias (manipulation of allocation to treatment groups).
- As treated (AT) analysis
  - Concerns all patients, but additionally
    - **Protocol deviations are acknowledged in statistical analyses.**
    - **Deviations, e.g. additional treatments are registered and used as potential confounding variables in statistical models.**
    - The impact of AT analyses is highlighted when studying long-term treatments and using long follow-up.

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Randomization in the Helsinki Psychotherapy Study

- **Initially planned only between 2 short-term psychotherapies**
- **Final study plan was extended to include 2 short-term and 1 long-term therapy, on the basis of**
  - lack of evidence on the optimal choice for short- vs. long-term therapy
  - ethical approval concerning inclusion and exclusion criteria and treatability by all the 3 treatments
  - consent of therapists and patients for randomization
- **A non-treatment comparison group was considered unethical and impossible**
- **Randomization between psychoanalysis (PA) and short-term therapies was considered unethical and implausible, due to**
  - specific suitability for psychoanalysis (e.g. analyzability, motivation)
  - analysts' non-consent for randomization

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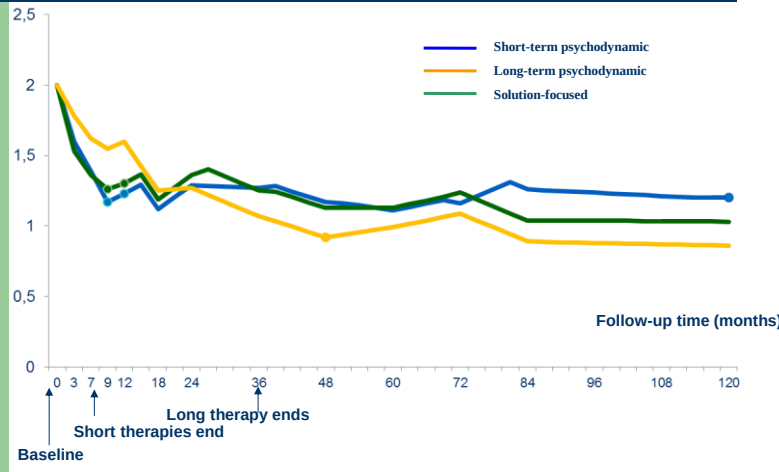
Effectiveness of therapies during a 10-year follow-up: trial

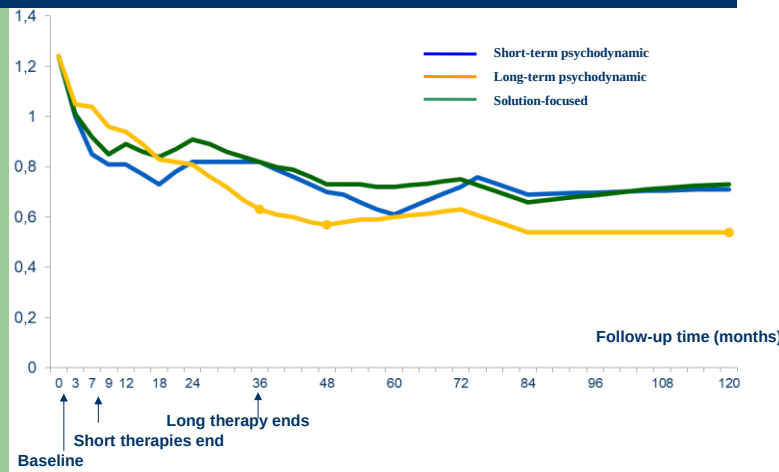
Depression

10-year follow-up (SCL-90-DEP)



Knekt ym. Psychol Med 2016

Anxiety (SCL-90-ANX)



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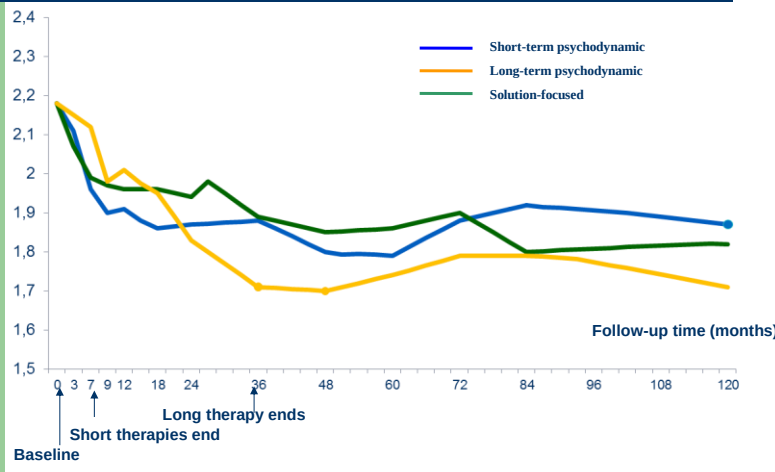
Work ability

10-year follow-up (SAS-work)



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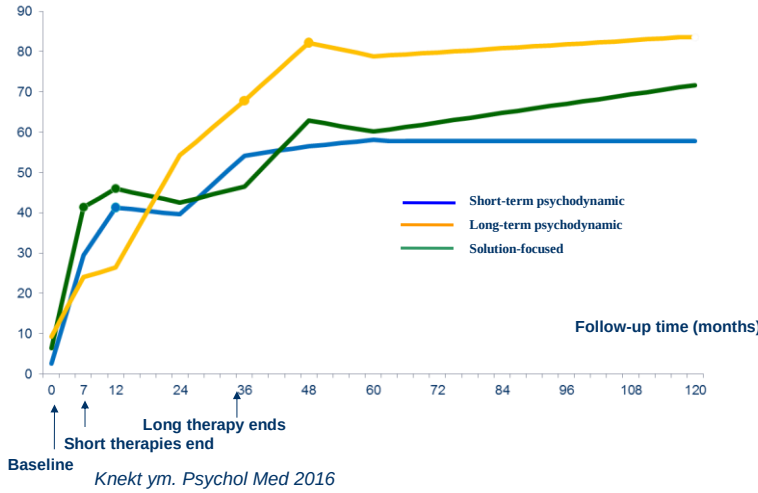
Self-concept, positive (affiliation)

10-year follow-up (SASB-AF)



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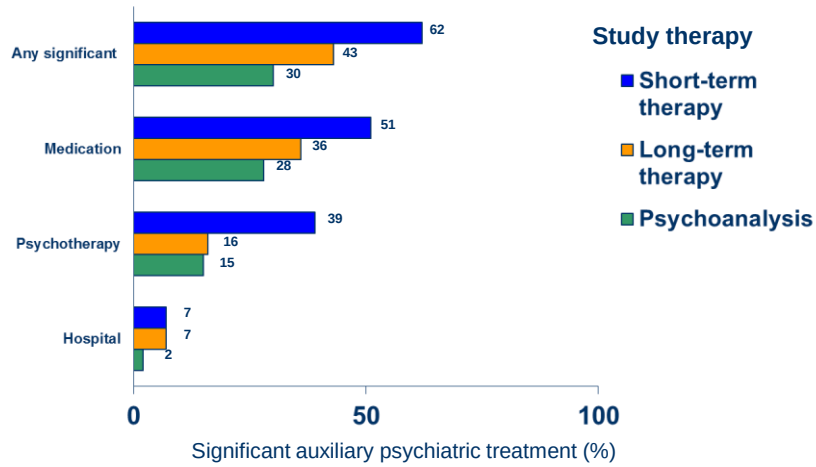
Use of additional psychiatric treatments during the follow-up

Knekt et al., J Affect Disord 2011

Significant auxiliary treatment in short- and long-term therapy groups, 5-year follow-up



Knekt et al., 2011

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Relative risk of incident auxiliary treatment between treatment groups

Auxiliary treatment	Therapy by HPS: Short therapy	Long therapy	Psycho-analysis
Some auxiliary treatment	**1.8***	1.0	0.6
Psychotropic medication	**1.5***	1.0	0.7
Psychotherapy	**2.1***	1.0	0.8

Knekt et al., 2011

* Differs statistically significantly from long-term therapy

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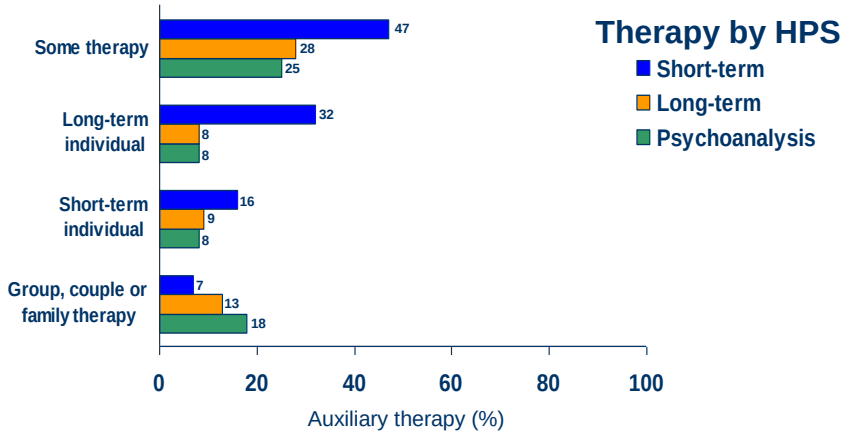
Rate of patients using auxiliary therapy; 5-year follow-up



Knekt et al., 2011

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Number of therapy sessions offered and taken by patients allocated to therapies during the 5-year f-u

Therapy sessions	Solution-focused therapy	Short-term psycho-dynamic therapy	Long-term psycho-dynamic therapy	Psycho-analysis
HPS protocol	**12**	**20**	Up to **240**	Up to **800**
Given by HPS	**10** (1-15)	**19** (4-23)	**232** (8-417)	**646** (74-1113)
Auxiliary therapy sessions added	**60** (3-416)	**70** (7-512)	**240** (8-448)	**670** (115-1113)

Knekt et al., 2011

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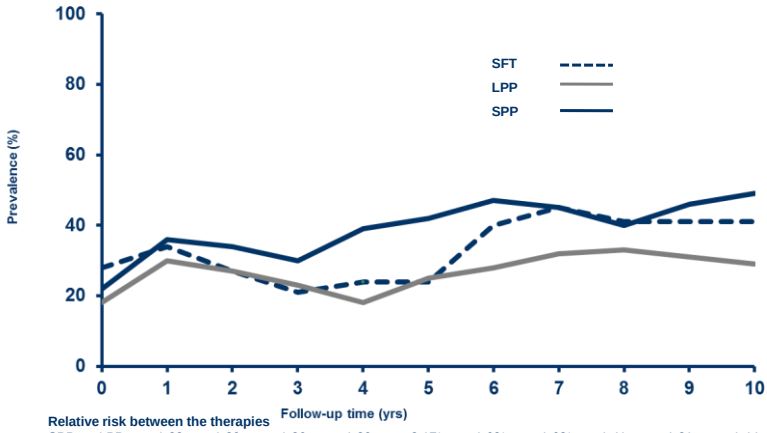
Use of psychotropic medication during 10-year follow-up



Relative risk between the therapies

SPP vs. LPP	1.22	1.20	1.26	1.30	2.17*	1.68*	1.68*	1.41	1.21	1.44	1.69
SFT vs. LPP	1.56	1.13	1.00	0.91	1.33	0.96	1.43	1.41	1.24	1.32	1.41
SPP vs. SFT	0.78	1.06	1.26	1.43	1.54*	1.63*	1.17	1.00	0.98	1.09	1.20

* P-value for difference from unity < 0.05.

Knekt et al., 2016

Sufficiency of study treatment for remission (SCL-90-GSI < 0.91) during 10-year follow-up

Remission (%)	SPP	SFT	LPP
Remitted without using significant auxiliary treatment	**45**	**55**	**62**
Remitted and used significant auxiliary treatment	**67**	**69**	**81**
Mean number of additional therapy sessions among users	***160***	***161***	***50***

Knekt ym. Psychol Med 2016

The cost-effectiveness of short-term and long-term psychotherapy in the treatment of depressive and anxiety disorders during a 5-year follow-up

Timo Maljanen [a,*], Paul Knekt [b,c], Olavi Lindfors [b], Esa Virtala [b], Päivi Tillman [a], Tommi Härkänen [b], The Helsinki Psychotherapy Study Group [a,b,c,d,e]

JAD 2016; 190

Average total direct costs

LPP	22.132 €
SPP	7.387 €
SFT	8.434 €

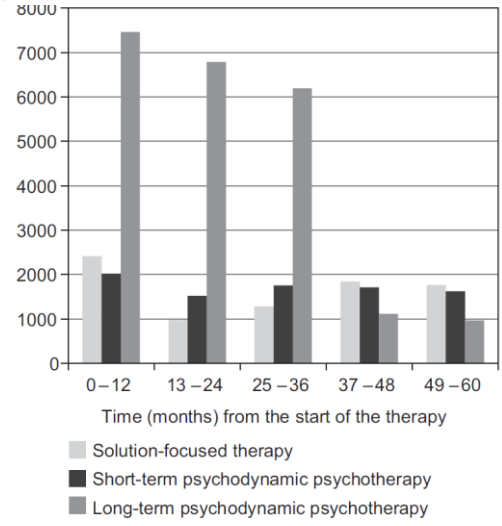


Fig. 1. The mean annual total undiscounted direct costs (euros) per patient during the five-year follow-up period.

Conclusions; 10-year follow-up of the trial

- LPP showed greater reductions in symptoms, greater improvement in work ability and higher remission rates than SPP (ITT analyses)
- Considering violation of treatment standards (AT analyses) similar differences were found in comparison to SFT in symptoms and work ability
- In case all the 198 patients allocated to short-term therapies would have received long-term therapy, about 25 patients more would have remitted
- Prevalence of auxiliary psychiatric treatment was relatively high
- All treatments were insufficient for part of patients
- Although short-term therapies appear on average more cost-effective than LPP, treatment selection was not based on patients' preference and suitability; costs of treatment failure have not been evaluated

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Suitability for psychotherapy: predictors of outcome in short- vs. long-term therapy

Why do we need research on predictors of psychotherapy?

- Knowledge from effectiveness trials – the comparative mean effects of psychotherapies – is not sufficient for guiding treatment decisions.
- Diagnosis is inadequate basis for treatment selection.
- In clinical practice patients' individual preferences and differences (resources, aptitudes and vulnerabilities) are important and may protect from negative treatment effects.
- Research on the predictors and moderators of psychotherapy effectiveness can help to improve practice guidelines and develop more effective clinical practice.

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Potential predictors of outcome studied in the HPS

Therapy-related predictors:
- Therapy form
- Length of therapy
- Therapeutic alliance
- Patient's expectations

Patient-related predictors:
- Demographic factors
- Psychiatric symptoms and diagnoses
- Psychiatric history
- Adverse childhood experiences
- Social factors
- Personality-related factors

Therapist-related predictors:
- Demographic factors
- Therapist training and experience
- Therapist's personal characteristics
- Therapist's professional characteristics

Predictors not specifically related to therapy:
- Social support
- Life events

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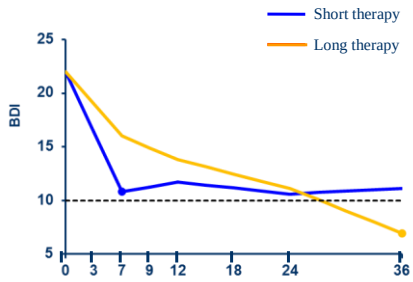
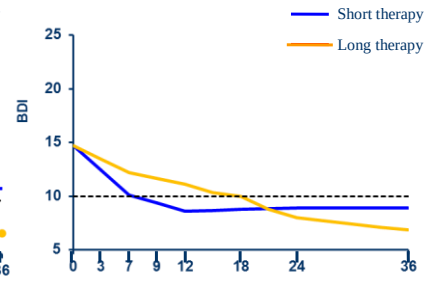
Self-concept (SASB affiliation score) as a predictor of changes in depressive symptoms (BDI), between short-term (SPP and SFT, combined) and long-term therapy

Negative self-concept



Positive self-concept



Lindfors et al. 2014 , JAD

- Statistically significant ($p < 0.05$) difference between short- and long-term therapy

Summary of findings, thus far, from the HPS suitability research on **patient characteristics**

- LPP seems to give on average, more beneficial effects in comparison to short-term therapy when the patient has
  - Poor psychological suitability (based on SPS scale) (Laaksonen et al. 2013)
  - Negative self-concept, poor quality of object relations (Lindfors et al. 2014)
  - Increased use of immature defenses (Laaksonen et al. 2014)
  - Lower level of personality organization (Knekt et al. 2016)
  - Higher level of intelligence (Knekt et al 2014)
  - Higher level of optimism (Knekt et al. 2016c)
  - Higher level of personality functioning (Lindfors et al. 2014)
- In LPP specifically
  - Higher level of social support is more beneficial than in short therapies (Lindfors et al. 2015)
  - Severity of interpersonal problems does not seem to disturb the development of alliance (Ollila et al. 2016)

Summary on **therapist characteristics** as predictors

- Therapists' professional and personal characteristics predict therapy outcome differently depending on the length of therapy (Heinonen et al. 2012, 2014)
  - Lower self-rated healing involvement and lower current skillfulness predict lesser outcomes especially in short-term therapy
  - High personality intensity appear to be beneficial especially for conducting short-term therapy
  - Lower self-rated forcefulness, lower task-orientation and lower characterological intensity appear beneficial especially for conducting long-term therapy
  - A faster symptom reduction in LPP vs. PA was predicted by a more moderate relational style and work experiences of both skillfulness and perceived difficulties

Conclusions

- "Average treatment effect does not generalize to individual patients" (Kramer et al. 2006)
- Further research is needed on the relative importance of patient, therapist and therapy relationship factors on sustained outcome and suitability of short- and long-term psychotherapies.
- Individual factors responsible for treatment success and failure can further be studied by quantitative methods and by qualitative methods (systematic case research) to give new hypotheses and more insight into unexpected prognoses.
- The future tasks of the Helsinki Psychotherapy Study cover these issues.

Implications of the study

- The findings have been acknowledged as evidence of greater long-term effectiveness of LPP vs. shorter therapies (which initially are often faster in producing positive changes) in patients with relatively long-standing depressive and anxiety disorders
- The findings have been incorporated in the practice guidelines regarding treatment of depression
- The study on the use auxiliary treatments as one indicator of (lack of) sustained effectiveness has had an impact of understanding the importance of carrying out comprehensive, long-term follow-up
- Predictors and mediators of effectiveness need to be studied in greater detail to inform optimal choice of treatment

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A view on ongoing study and future perspectives

- Effectiveness study
  - Cost-effectiveness during the 10-year follow-up
  - Effects on somatic health and health behavior, social support
- Suitability research, prediction of the effectiveness of short- vs. long-term therapy by patient and therapist factors
  - Different types of childhood adversity as predictors of outcome
  - Other specific patient factors (e.g. sense of coherence, reflective ability) as predictors of outcome in different outcome dimensions
  - Global estimation of the relative importance of different patient factors and alliance on outcome
  - Potential for joined meta-analyses focused on predictors of outcome

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A view on ongoing study and future perspectives…

- Determinants of untypical therapy & use of auxiliary treatment
- Alliance research
- Potential for genetic research
- Qualitative study
  - Building new hypotheses: Evaluation of treatment failure vs. success (qualitative study based on quantitative study findings)
- Research-practice (and training) network based on the HPS findings
  - National co-operation with the authorities in charge of evaluating and carrying out psychotherapist training programs
  - Guidelines and tools for psychotherapy assessment (suitability) and monitoring the need of psychotherapy

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Information of the HPS and the list of publications

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