

1 **Randomized trial on the effectiveness of long and short-term psychodynamic psychotherapy**
2 **and solution-focused therapy on psychiatric symptoms during a 3-year follow-up**

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34

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36 **ABSTRACT**

37 **Context:** Insufficient evidence exists for a viable choice between long and short-term
38 psychotherapies in the treatment of psychiatric disorders.

39 **Objective:** To compare the effectiveness of long and short-term psychodynamic psychotherapy and
40 solution-focused therapy in the treatment of mood and anxiety disorders.

41 **Design:** The Helsinki Psychotherapy Study is a randomized trial with a 3-year follow-up, carried
42 out from 1994-2005.

43 **Setting and Patients:** A total of 326 psychiatric outpatients from the Helsinki area, 20-46 years of
44 age, and with mood (84.7%) or anxiety disorder (43.6%). None of the patients withdrew because of
45 adverse effects.

46 **Interventions:** The patients were randomly assigned to three treatment groups; long-term
47 psychodynamic psychotherapy, short-term psychodynamic psychotherapy, and solution-focused
48 therapy. The duration of the three therapies was up to 3 years, 5-6 months, and no more than 8
49 months, respectively.

50 **Main Outcome Measures:** Primary outcome measures were depressive symptoms measured by
51 self-report BDI and observer-related HDRS, and anxiety symptoms measured by self-report SCL-
52 90-Anx and observer-related HARS.

53 **Results:** A statistically significant reduction of symptoms was noted both for BDI (51%), HDRS
54 (36%), SCL-90-Anx (41%) and HARS (38%) during the 3-year follow-up. Short-term
55 psychodynamic psychotherapy was more effective than long-term psychodynamic psychotherapy
56 during the first year showing 15%-27% lower scores for the 4 outcome measures. During the
57 second year of follow-up no significant differences were found between the brief therapies and
58 long-term psychodynamic psychotherapy, and after 3 years of follow-up long-term psychodynamic
59 psychotherapy was shown to be more effective with 14%-37% lower scores of the outcome
60 variables. No statistically significant score differences were found between the brief therapies.

61 **Conclusions:** Brief therapies give faster benefits than long-term psychodynamic psychotherapy but
62 in the long run long-term psychodynamic psychotherapy is superior to brief therapies. More
63 research is, however, still needed to determine to whom long-term psychotherapy should be
64 recommended for the treatment of depressive or anxiety disorders.

65 INTRODUCTION

66 Mood and anxiety disorders are prevalent and incapacitating disorders that commonly run a
67 recurrent and chronic course.¹ Different psychotherapies are widely applied in the treatment of
68 these disorders and short-term efficacy of brief psychotherapies, especially cognitive, cognitive-
69 behavioral, interpersonal, and psychodynamic individual psychotherapies, have been demonstrated
70 in clinical trials.²⁻⁴ Short-term psychodynamic psychotherapy is a brief individual psychotherapy,
71 which is widely used in ordinary clinical practice, and which has been shown to be efficient.⁵⁻⁷
72 Solution-focused therapy, which was developed from therapies applying a problem solving
73 approach and systemic family therapy,⁸ has been reported to produce rapid effects with reductions
74 in psychiatric symptoms after only a few sessions.⁹ It has been suggested that although the efficacy
75 of brief therapies in alleviating psychiatric symptoms has been shown to be good in the short-term,
76 treatment results may not be maintained, while long-term psychotherapy may result in more
77 enduring changes.^{10, 11} Non-randomized studies have, however, given inconsistent results on the
78 efficacy of long-term psychotherapy.^{12, 13} Thus far, no evidence from randomized clinical trials
79 exists on the differential efficacy of short and long-term therapies and on maintenance of treatment
80 effects from brief therapies in the long run. To address this lack of evidence we conducted a
81 randomized clinical trial comparing the effect of long and short-term psychodynamic psychotherapy
82 and solution-focused therapy in the treatment of depressive and anxiety disorders and followed the
83 treatment effects during a 3-year follow-up.

84 **PATIENTS AND METHODS**

85 The methods used have been described in detail elsewhere¹⁴ and are summarized briefly here.

86 Patients gave written informed consent. The project follows the Helsinki Declaration and was
87 approved by the Helsinki University Central Hospital's ethics council.

88

89 **Patients and Settings**

90 A total of 580 outpatients were recruited from psychiatric services in the Helsinki region from June
91 1994 to June 2000. They were referred to the project by psychiatrists working in private practice,
92 the community mental health care and student health care systems, and by occupational health
93 services. The patients represented individuals usually treated by psychotherapy in southern Finland.
94 Eligible patients were 20-45 years of age and had a long-standing (> 1 year) disorder causing social
95 dysfunction in work ability. They had to meet DSM-IV criteria¹⁵ for anxiety or mood disorders and
96 be estimated on a psychodynamic scale of suffering from neurosis to high-level borderline disorder.
97 Patients were excluded from the study for the following reasons: psychotic disorder or severe
98 personality disorder, adjustment disorder, substance use disorders, organic brain disease or other
99 severe organic disease, and mental retardation. Individuals treated with psychotherapy within the
100 previous 2 years, psychiatric health employees and persons known to the research team members
101 were also excluded.

102

103 **Study design**

104 The patients who remained eligible at baseline were randomly assigned according to a central
105 computerized randomization schedule in a 1: 1.3: 1 ratio to short and long-term psychodynamic
106 psychotherapy and solution-focused therapy. Consecutively numbered envelopes containing
107 concealed assignment codes were assigned sequentially to eligible patients by a research associate.

108 **Treatments**

109 *The therapies*

110 Short-term psychodynamic psychotherapy was scheduled for 20 treatment sessions, one session per
111 week, over 5-6 months. The frequency of sessions in long-term psychodynamic psychotherapy was
112 scheduled for 2-3 times a week, and the duration of therapy was up to 3 years. The frequency of
113 sessions for solution-focused therapy was flexible, usually one session every second or third week,
114 up to a maximum of 12 sessions, over no more than 8 months.

115

116 Short-term psychodynamic psychotherapy is characterized by the exploration of a focus, which can
117 be identified by both the therapist and the patient. This consists of material from current and past
118 interpersonal and intrapsychic conflicts and the application of confrontation, clarification and
119 interpretation in the process in which the therapist is active in creating the alliance and ensuring the
120 time-limited focus.¹⁶

121

122 Long-term psychodynamic psychotherapy is characterized by a framework in which the central
123 elements are exploration of unconscious conflicts, deficits and distortions of intrapsychic structures.
124 Confrontation, clarification and interpretation are major elements, as well as therapist's actions in
125 ensuring the alliance and working through the therapeutic relationship to attain conflict resolution
126 and greater self-awareness.¹⁷

127

128 Solution-focused therapy emphasizes the identification of a problem and collaborative efforts to
129 maintain a focus on finding a solution to the problem.^{9, 18} The goal-oriented technique includes the
130 search for pre-session change, miracle and scaling questions, exploration of exceptions, use of a
131 one-way mirror and consulting break, positive feedback and home assignments.

132 *The therapists*

133 Altogether 55 therapists participated in the study; 41 provided long-term psychodynamic
134 psychotherapy, 12 short-term psychodynamic psychotherapy, and 6 solution-focused therapy. The
135 therapists giving short-term and long-term psychodynamic psychotherapy were mainly
136 psychologists (83% and 81%, respectively) whereas those giving solution-focused therapy had a
137 more heterogeneous educational background (e.g psychologists, physicians or social workers). The
138 therapists had practiced for at least 2 years after their training in the special form of therapy. The
139 mean number of years of experience was 18 for therapists giving long-term psychotherapy and 9
140 both for therapists giving short-term psychodynamic psychotherapy and solution-focused therapy.
141 No therapy manuals were used and no video or audio taping was carried out during the sessions.

142

143 **Assessments**

144 Approved methods were used for assessment of psychiatric symptoms and psychiatric diagnosis.¹⁴
145 The measurements were carried out as ratings based on interviews and self-report questionnaires.
146 The interviews were conducted by experienced clinical raters. The quality of the interview data (i.e.
147 the agreement between raters and the long-term stability of ratings) was continuously controlled.
148 The interviews, although not blinded, were carried out at a separate physical location from the
149 treatment sessions. The assessments were completed at baseline examination and during follow-up
150 at 3, 7, 9, 12, 18, 24 and 36 months. Questionnaires were administered on each of these occasions
151 whereas the interviews were repeated at 7, 12, and 36 months.

152

153 The primary outcomes measured, specified *a priori*, were depressive and anxiety symptoms.
154 Symptoms of depression were assessed by the Beck Depression Inventory (BDI)¹⁹ and by the
155 Hamilton Depression Rating Scale (HDRS).²⁰ Symptoms of anxiety were assessed by the Symptom
156 Check List Anxiety Scale (SCL-90-Anx)²¹ and the Hamilton Anxiety Rating Scale (HARS).²²

157 The Symptom Check List Global Severity Index (SCL-90-GSI),²¹ a measure of general psychiatric
158 symptoms, was used as a secondary outcome. Other secondary measures were remission from
159 depressive symptoms and recovery from psychiatric diagnosis on axis I. Self-report remission from
160 depressive symptoms was defined as a total score of < 10 in the BDI²³ and recovery from
161 psychiatric diagnosis was assessed according to the DSM-IV diagnostic criteria¹⁵ using a semi-
162 structured interview.

163

164 Socioeconomic factors (sex, age, marital status, education, and employment status), psychiatric
165 history data (age at onset of first psychiatric symptoms, number of previous episodes, and duration
166 of symptoms), and attempted suicides were assessed at baseline using questionnaire and interview.
167 Previous psychiatric treatment (psychotherapy, psychotropic medication, and psychiatric
168 hospitalization) was also assessed. A telephone interview, including information on the symptom
169 status and the reason for the dropout (Psychiatric Symptoms Questionnaire, PSQ) was completed
170 whenever possible for each dropout patient for whom no other interview or questionnaire data were
171 available.

172

173 **Statistical methods**

174 It was estimated that 100 patients in the short-term psychodynamic and solution-focused therapy
175 groups and 130 in the long-term psychodynamic psychotherapy group were required to have a 95%
176 probability of detecting a significant 20% difference during a 3-year follow-up between the 3
177 groups in the BDI and SCL-90-Anx.

178

179 The main analyses were based on the ‘intention-to-treat’, and complementary ‘as treated’ analyses
180 were performed. The data contained repeated measurements of the main response variables, quality
181 of study treatment, auxiliary treatments, and dropouts of patients from measurement occasions. The

182 primary analyses were based on the assumption of ignorable drop-outs. In secondary analyses
183 missing values were replaced by multiple imputation. The imputation was based on Markov chain
184 Monte Carlo methods. The variables in the imputation model were assumed to follow a multinormal
185 distribution, and the treatment groups were imputed separately. The imputation model contained the
186 outcome variable, an indicator for whether the patient received the study treatment or not,
187 discontinuation of the study treatment, the most relevant information on auxiliary treatments, and
188 the indicators Symptom Check List Global Severity Index (SCL-90-GSI) and Global Assessment of
189 Functioning scale (GAF).¹⁵

190
191 In the case of continuous response variables, the statistical analyses were based on linear mixed
192 models,²⁴ and in the case of binary responses, logistic regression models and generalized estimating
193 equations estimation were used.²⁵ The dependencies between the design points were accounted for
194 in the case of the linear mixed models by assuming the unstructured correlation structure. In the
195 case of the logistic regression models, the alternating logistic regression method²⁶ with fully
196 parameterized clusters was applied. Also simpler structures were used when necessary. Several
197 model-adjusted statistics were calculated for different design points.²⁷ For continuous responses,
198 means and mean differences and for binary responses, prevalences and relative odds were
199 estimated. The delta method was used for calculation of confidence intervals.²⁸ Statistical
200 significance was tested with the Wald test.

201
202 Three primary ‘intention-to-treat’ models were used. The basic model included the main effects of
203 time, treatment group, the difference between theoretical and realized date of measurement, and
204 first-order interaction of time and treatment group. A complete model further included the potential
205 confounding factors of age, sex, marital status, education, age at onset of first psychiatric disorder,
206 separation experiences, and axes I and II diagnosis. A test for significance of effect modification of

207 baseline diagnosis on the treatment effect was carried out in a third model by including an
208 interaction term between diagnosis, time, and treatment group in the basic model. Complementary
209 analyses were carried out adjusting for the baseline level of the outcome measures. ‘As-treated’
210 models were carried out by including variables describing compliance (i.e. waiting time from
211 randomization to initiation and degree of participation, including an indicator for whether the
212 patient received the study treatment or not and for discontinuation of the study treatment), and
213 auxiliary treatment (i.e. psychiatric medication, therapy or psychiatric hospitalization) during
214 follow-up as main effects in the models. All models were carried out based on both the original data
215 and on multiple imputed data. Since no major differences were found between the different models,
216 the results presented are mainly based on the basic intention-to-treat model.

217

218 The statistical analyses were mainly carried out with the SAS software SAS/STAT (procedures
219 MIXED, GENMOD, and MI) and SAS/IML (procedure IML).²⁹

220 **RESULTS**

221

222 *Patient enrollment and treatment received*

223 Of the 580 patients referred to the project, 381 satisfied the eligibility criteria and were willing to
224 participate in the study.¹⁴ During the waiting time (average 56 days) from the assessment of
225 eligibility to baseline examination, 55 of these decided not to participate (**Figure 1**). Of the
226 remaining 326 patients, 128 were randomly assigned to long-term psychodynamic therapy, 101 to
227 short-term psychodynamic therapy, and 97 to solution-focused therapy. Of the patients randomized,
228 26 patients assigned to long-term psychotherapy and 7 assigned to brief therapies refused to
229 participate after assignment to the treatment group. Of the patients starting the assigned therapy a
230 total of 42 patients discontinued the treatment prematurely. The patients discontinuing solution-
231 focused therapy had more symptoms than those continuing treatment (data not shown). The average
232 number of therapy sessions among patients starting the therapy was 232 (SD = 105) in the long-
233 term psychodynamic psychotherapy, 18.5 (SD = 3.4) in the short-term psychodynamic
234 psychotherapy, and 9.8 (SD = 3.3) in the solution-focused therapy group, and the mean length of
235 therapy was 31.3 (SD = 11.9), 5.7 (SD = 1.3), and 7.5 (SD = 3.0) months, respectively.

236

237 About 60% of the patients used auxiliary treatment during the 3-year follow-up (**Table 1**). Use of
238 psychotropic medication or antidepressant medication was more common in the short-term
239 psychodynamic psychotherapy group than in the other groups and auxiliary psychotherapy was
240 more common in the two brief therapy groups than in the long-term psychodynamic psychotherapy
241 group. The average total number of therapy sessions among all patients randomized was 202 in
242 long-term psychodynamic psychotherapy, 50.8 in short-term psychodynamic psychotherapy, and
243 37.7 in solution-focused therapy, after addition of the auxiliary therapies to the treatment given by

244 the project. Only 3.1% of the patients were treated at a psychiatric hospital during the follow-up
245 and none of these patients was from the solution-focused therapy group.

246

247 *Characteristics at baseline examination*

248 The patients were relatively young and predominantly females (**Table 2**). About half of them were
249 living alone and over one-fifth had an academic education. More than half of them were either
250 employed or students. Over 80% of the patients suffered from mood disorder and over 40% from
251 anxiety disorder. No significant differences among treatment groups were found with respect to
252 baseline demographic or clinical characteristics.

253

254 *Drop-out during follow-up*

255 The mean drop-out at the 8 measurement occasions was 13% in the short-term psychodynamic
256 psychotherapy group, 18% in the long-term psychodynamic psychotherapy group, and 15% in the
257 solution-focused therapy group. The corresponding values among individuals starting the therapy
258 after randomization were 12%, 5% and 12%, respectively. Two patients from the short-term
259 psychodynamic psychotherapy group, nine from the long-term psychodynamic psychotherapy
260 group, and three from the solution-focused therapy group participated only at baseline
261 measurement. Of these 14 patients, 2 participated in the assigned therapy. Only small differences
262 were found in drop-outs between treatment groups at single points of time (**Figure 2**). The major
263 reason for drop-out from a study occasion was refusal, because the study occasion was experienced
264 as mentally stressful or because the patient was disappointed with the treatment. Disappointment
265 with study treatment was statistically significantly a more common reason for drop-out in the
266 solution-focused therapy group than in the two psychotherapy groups ($P < 0.001$). Of the patients
267 refusing, 42% gave information on their symptoms (major psychiatric symptoms, anxiety symptoms
268 or depressive symptoms) and perceived need for psychiatric treatment by answering questions on

269 the PSQ. Symptoms and perceived need for psychiatric treatment were statistically more common
270 in the solution-focused therapy group (data not shown).

271

272 *Treatment effects*

273 Symptom scores

274 A statistically significant reduction of symptoms was noted for all 5 scores considered in all three
275 treatment groups during the 3-year follow-up ($P < 0.001$, **Table 3**). The average score reduction was
276 51% in the BDI and 36% in the HDRS. The corresponding values for the anxiety score SCL-90-
277 Anx and the HARS were 41% and 38%, respectively. The reduction was 39% in the global measure
278 SCL-90-GSI. For all scores, the reduction was faster in the short-term therapy groups during the
279 first year of follow-up after which the reduction continued during the entire 3-year follow-up only
280 for the long-term psychodynamic psychotherapy group.

281

282 Short-term psychodynamic psychotherapy was more effective in reducing symptoms of depression
283 than long-term psychodynamic psychotherapy at the 7-12 months follow-up points, showing
284 significantly lower score values both for BDI and HDRS (**Table 3**). The mean BDI and HDRS
285 score differences between the two treatment groups after the first year of follow-up were -2.6 (CI =
286 -5.0, -0.3) and -1.9 (CI = -3.6, -0.3), respectively. During the second year of follow-up, no
287 significant differences were found between the two psychotherapy groups, and after 3 years of
288 follow-up, long-term psychodynamic psychotherapy was statistically significantly more effective
289 than short-term psychodynamic psychotherapy with 3.8 (CI = 1.4, 6.2) units lower BDI values and
290 1.9 (CI = 0.3, 3.5) units lower HDRS values in than short-term psychodynamic psychotherapy. The
291 results for anxiety symptoms and the global symptom score were similar. Short-term
292 psychodynamic psychotherapy was more effective than long-term psychodynamic psychotherapy at
293 the 7-month follow-up point with mean differences for SCL-90-Anx and HARS of -0.19 (CI =

294 -0.37, -0.01) and -1.6 (CI = -3.0, -0.2), respectively. At the 3-year follow-up point, the effectiveness
295 was reversed with mean differences of 0.20 (CI = 0.02, 0.38) for SCL-90-Anx and 1.3 (CI = -0.1,
296 2.8) for HARS. For SCL-90-GSI the difference at the 1-year time point was -0.15 (CI = -0.28,
297 -0.01) and after 3 years of follow-up 0.16 (CI = 0.01, 0.32).

298

299 The differences in effectiveness between long-term psychodynamic psychotherapy and solution-
300 focused therapy were similar to those between short and long term psychodynamic psychotherapy
301 (**Table 3**). The major difference was that solution-focused therapy was more effective in reducing
302 subjective depressive symptoms than long-term psychodynamic psychotherapy at an earlier stage
303 and for a shorter time period than short-term psychodynamic psychotherapy. Another difference
304 was that solution-focused therapy was no more beneficial in the treatment of anxiety symptoms
305 during the first year of follow-up. No statistically significant score differences were found between
306 the two short-term therapies at any of the 7 measurement occasions during the follow-up for any of
307 the five outcome measures considered (**Table 3**).

308

309 The results of the comparisons between treatment groups were mainly the same in all the
310 ‘Intention-to-treat’ models adjusting for potential confounding factors, and no significant
311 interactions between treatment group and diagnosis were found (data not shown). Also the results
312 of the ‘As-treated’ models, including waiting time to start of therapy, withdrawal from therapy after
313 randomization, discontinuing of treatment, and use of auxiliary treatment (i.e. psychotropic
314 medication, therapy, or hospitalization) during follow-up were similar (data not shown). Multiple
315 imputation of missing values weakened some of the associations, but the main findings remained
316 (data not shown).

317

318 Remission from symptoms and recovery from diagnosis

319 Remission from depressive symptoms showed a similar pattern to the BDI and HDRS scores, but

320 the associations were somewhat weaker (**Figure 2**). The brief therapies were statistically
321 significantly more effective than long-term psychodynamic psychotherapy during the first 7-12
322 months of follow-up, with an odds ratio (OR) of 3.21 (CI = 1.65, 6.27) for solution-focused therapy
323 at the 7-month time point and with an OR of 2.21 (CI = 1.20, 4.07) for short-term psychodynamic
324 psychotherapy at the 12-month point. At the 3-year time point the long-term psychotherapy
325 appeared to be suggestively more effective than the brief therapies, with ORs of 0.57 (CI = 0.30,
326 1.08) and 0.51 (CI = 0.25, 1.03) in comparison with the short-term psychodynamic psychotherapy
327 and the solution-focused therapy, respectively. The effect of solution-focused therapy was non-
328 significantly more rapid than that of the short-term psychodynamic psychotherapy, with an OR of
329 0.52 (CI = 0.27, -1.02) after three months of follow-up. Inclusion of need for auxiliary treatment
330 among drop-outs did not notably alter the results (data not shown).

331

332 The study of changes in diagnoses during the follow-up showed that a statistically significantly
333 greater number of patients in the brief therapy groups recovered from mood disorder, and more
334 patients in the short-term psychodynamic psychotherapy group recovered from anxiety disorder
335 than in the long-term psychotherapy group during the first 7-12 months of follow-up (**Table 4**).
336 After 3 years of follow-up, recovery from anxiety disorder was fourfold and statistically
337 significantly higher in the long-term psychodynamic psychotherapy group than in either of the brief
338 therapy groups, whereas no significant excess benefit on depression was seen in the long-term
339 psychodynamic psychotherapy group. No differences in recovery were observed between the two
340 brief therapy groups. No notable differences in results were found in the different statistical models
341 used (data not shown).

342 **DISCUSSION**

343 *Main findings*

344 The present trial compared the effectiveness of two short-term therapies and long-term
345 psychodynamic psychotherapy among patients with depressive and anxiety disorders. During the
346 first year of follow-up, patients treated by short-term psychodynamic psychotherapy recovered
347 faster from both depressive and anxiety symptoms, and patients treated by solution-focused therapy
348 recovered faster from depressive symptoms than patients receiving long-term psychodynamic
349 psychotherapy. After three years of follow-up, however, the situation was reversed with a stronger
350 treatment effect in the long-term psychodynamic treatment group both for patients with depressive
351 and anxiety symptoms. Thus in the long run, long-term psychodynamic psychotherapy was more
352 effective than the brief therapies. These findings are in line with the theoretical backgrounds of the
353 therapies considered. In short-term therapies, an active, problem-based or dynamically focused
354 orientation is applied, which makes it possible for patients to utilize these helpful elements of
355 therapy in a short time frame. On the other hand, psychodynamic therapists working long-term
356 focus on working more slowly and deeply, aiming to produce more global changes by affecting the
357 long-term vulnerability to stressors.¹¹

358

359 We found a rapid and similar decrease in both self-reported and observer-rated depressive and
360 anxiety symptoms in both short-term therapies during the therapy and a less prominent reduction of
361 symptoms later on. The finding that both short-term therapies produced a comparable reduction in
362 symptoms seems to point to the fact that common beneficial ingredients in these therapies are more
363 important than specific theoretical orientation and unique ingredients in producing changes when
364 therapies are carried out by equally experienced therapists.³⁰ Moreover, the majority of previous
365 studies on efficacy of short-term psychodynamic psychotherapy have reported a similar rapid
366 decline in approximately 3-6 months both in depressive³¹⁻³⁴ and anxiety symptoms.^{35, 36}

367

368 The effect reached during the first few months persisted in both brief treatment groups during the
369 entire 3-year follow-up. This is in accordance with earlier studies on the efficacy of short-term
370 psychodynamic psychotherapies in which the pre-post and pre-follow-up effects have been
371 practically identical.³⁷ As far as we know, however, no previously published follow-up data for
372 solution-focused therapy is available. The stability in the level of psychiatric symptoms indicates
373 equal maintenance of gains but also equal lack of additional symptom improvement after both
374 short-term treatments.

375

376 The orientation in solution-focused therapy uses amplification of patient improvement and relies
377 heavily on a resource-oriented collaboration.³⁸ This highly supportive and encouraging technique is
378 probably a key factor for rapid changes early on in therapy. Accordingly, we found a more rapid
379 decrease of depressive symptoms and a more rapid remission of depression in the solution-focused
380 therapy group than in the short-term psychodynamic psychotherapy group during the first 3-7
381 months. This finding is also in agreement with previous research which has reported that in
382 comparison with other therapies the treatment effects were already seen after only a few sessions.⁹
383 The rate of patients reaching remission in our study was comparable with that observed in most of
384 the previous research.^{32, 39, 40}

385

386 The study of the effect of treatment on diagnosis of anxiety disorders showed that long-term
387 psychodynamic psychotherapy was about 4 times as effective as the brief therapies at the 3-year
388 measurement point. No similar effect for mood disorder was noted. This far better outcome in
389 anxiety disorders could be explained by the possibility that, a more thorough approach is required
390 for the resolution of psychological conflicts related to anxiety disorders. In depression, the recovery
391 rates in all therapies were more modest. It is possible that the neurophysiological elements of

392 depression are such crucial predictors of remission that long-term treatment of up to 3 years does
393 not in itself show similarly superior effects.⁴¹

394

395 *Methodological aspects*

396 As far as we know this is the first randomized clinical trial comparing the effect of brief and long-
397 term psychotherapies. Definite advantages of the study are the relatively large sample ensuring that
398 relevant effect can be detected and the long follow-up time. Because of the long follow-up, no non-
399 treatment control group could be included for ethical reasons. Consequently, we could not control
400 for possible reductions in symptoms due to factors other than the treatments given. This restriction,
401 however, did not affect the comparability among the three treatment groups. Since we aimed to
402 study the effectiveness of treatment as given in normal clinical practice conducted in a
403 representative sample of outpatients, no treatment manuals were used, and subjects suffering from
404 both depressive symptoms and anxiety symptoms were included. Both issues also include
405 limitations.¹⁴

406

407 Methodological issues of special importance for the interpretation of the results from the main
408 ‘intention-to-treat’ analyses of this study are the success of randomization, compliance of study
409 treatment (i.e. withdrawal from treatment after randomization, discontinuation of therapy, and use
410 of auxiliary treatment during follow-up), and drop-out of patients from the measurement occasions.
411 The randomization of the patients was succesfull, apparently because of the relatively large number
412 of patients in the three therapy groups. Consequently, only a few confounding factors had to be
413 included in the models, and their effects on the results appeared to be negligible. The possible
414 interaction between treatment group and diagnosis was negligible as well. The possible bias due to
415 different baseline levels of the outcome variables in the three treatment groups was adjusted by
416 inclusion of the variable at baseline as a covariate in the models. The fact that over 20% of the

417 patients belonging to the long-term psychotherapy group withdrew from treatment after
418 randomization might potentially have caused bias in the data. These individuals might have
419 experienced weaker symptoms and were therefore not willing to commit themselves for 3 years.
420 The fact that individuals discontinuing solution-focused therapy had more symptoms than those
421 completing treatment might have biased the results. Likewise, the fact that the occurrence of
422 auxiliary treatment (psychotropic medication, psychotherapy or hospitalization) was lower in the
423 long-term psychodynamic psychotherapy group during the 3-year follow-up than in the short-term
424 treatment groups was a potential source of bias. Adjustments for withdrawal, discontinuing, and
425 auxiliary treatment in 'As treated' analyses did not, however, notably alter the results from those of
426 the 'Intention-to-treat' analyses. Finally, although the rate of drop-out of patients from the
427 measurement occasions during follow-up was low, the fact that those who dropped out from the
428 solution-focused group more often had psychiatric symptoms and more often needed psychiatric
429 treatment might have biased the results in the basic 'Intention-to-treat' analyses. Analyses based on
430 multiple imputation and taking into account the need for treatment at the time of drop out did not,
431 however, notably alter the results, suggesting that the results presented are unbiased.

432

433 *Conclusions*

434 In conclusion, patients receiving short-term psychodynamic psychotherapy recovered faster during
435 the first year of follow-up from both depressive and anxiety symptoms, and those receiving
436 solution-focused therapy recovered faster from depressive symptoms than patients receiving long-
437 term psychodynamic psychotherapy. During the two following years, the symptoms persisted at the
438 level reached in the two brief therapy groups, whereas in the long-term psychodynamic
439 psychotherapy group the improvement continued during the entire 3-year period. In the long run,
440 long-term psychodynamic psychotherapy thus gave benefits greater than those reached by the brief
441 therapies. More research is needed to determine to whom long-term psychotherapy should be

442 recommended.

443 Figure 1. Number of patients assessed for eligibility, assigned to study group, and completed the
444 protocol.

445 Figure 2. Remission from depressive symptoms (BDI) (● statistically significant difference from preceding
446 point of time, *statistically significant difference between groups).

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541 **ACKNOWLEDGEMENTS**

542

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Table 1. Auxiliary treatment during the 3-year follow-up; number of patients (percent).

	Solution-focused therapy (N=97)		Short-term psychodynamic psychotherapy (N=101)		Long-term psychodynamic psychotherapy (N=128)	
Any psychiatric treatment	58	(59)	64	(63)	60	(47)
Psychotropic medication	41	(42)	50	(50)	52	(41)
Antidepressant medication	32	(33)	41	(41)	43	(34)
Psychotherapy	34	(35)	36	(36)	21	(16)
Individual therapy	27	(28)	31	(31)	8	(6)
Long-term	20	(21)	23	(23)	3	(2)
Short-term	11	(11)	8	(8)	5	(4)
Family and couple therapy	6	(6)	2	(2)	7	(5)
Group therapy	2	(2)	4	(4)	3	(2)
Other therapy	3	(3)	3	(3)	4	(3)
Psychiatric hospitalization	0	(0)	5	(5)	7	(5)

Table 2. Baseline characteristics of the 326 patients intended to treat by treatment group.

Characteristic	Solution-focused Therapy (N=97)	Short-term psychodynamic psychotherapy (N=101)	Long-term psychodynamic psychotherapy (N=128)	P-value for difference
Socioeconomic variables				
Age (years)	33.6 (7.2) ¹	32.1 (7.0)	31.6 (6.6)	0.08
Males (%)	25.8	25.7	21.1	0.63
Full time employed or student (%)	65.2	61.4	58.0	0.54
Living alone (%)	56.7	48.5	49.2	0.44
Academic education (%)	28.9	19.8	28.1	0.26
Psychiatric background				
<i>Psychiatric history</i>				
Primary psychiatric disorder at age < 22 years (%)	66.0	57.6	63.0	0.48
Recurrent episodes of major depressive disorder (%)	60.0	68.3	69.1	0.45
Duration of disorder over 5 years (%)	36.5	33.0	29.9	0.59
<i>Attempted suicide (SSI) (%)</i>	9.4	7.1	11.1	0.59
<i>Psychiatric treatment</i>				
Psychotherapy (%)	20.0	18.8	19.0	0.98
Psychotropic medication (%)	27.8	21.8	17.6	0.19
Hospitalization (%)	2.1	0.0	2.4	0.31
Previous psychiatric diagnosis				
Mood disorder (%)	86.6	78.2	88.3	0.09
Anxiety disorder (%)	46.4	49.5	36.7	0.12
Personality disorder (%)	18.6	24.8	12.5	0.06
Psychiatric co-morbidity (%)	45.4	48.5	36.7	0.17

¹ Mean (SD)

Table 3. Mean score levels (s.e.) of psychiatric symptoms in treatment groups and mean score differences (95% confidence interval) between the treatment groups.

Outcome variable	Time (month)	Mean scores ¹ (s.e)			Mean score difference ² (95% confidence interval)					
		Solution-focused therapy (SFT) (N = 97)	Short-term psychodynamic psychotherapy (SPP) (N = 101)	Long-term psychodynamic psychotherapy (LPP) (N=128)	SFT vs LPP		SPP vs LPP		SPP vs SFT	
Depressive symptoms										
BDI	0	18.2 (0.81)	17.9 (0.79)	18.7 (0.70)	0	0	0			
	3	12.4* (0.89)	12.8* (0.84)	15.0* (0.79)	-2.6 (-4.6, -0.6)	-1.9 (-3.8, +0.1)	+0.7 (-1.3, +2.8)			
	7	10.4* (0.90)	10.3* (0.88)	14.1 (0.82)	-3.7 (-5.8, -1.5)	-3.4 (-5.6, -1.3)	+0.2 (-2.0, +2.5)			
	9	10.7 (0.92)	9.6 (0.88)	12.6* (0.80)	-1.8 (-4.0, +0.5)	-2.6 (-4.8, -0.5)	-0.8 (-3.1, +1.5)			
	12	10.6 (1.02)	9.6 (0.97)	12.5 (0.87)	-2.0 (-4.4, +0.5)	-2.6 (-5.0, -0.3)	-0.7 (-3.2, +1.9)			
	18	10.1 (1.05)	8.7 (0.99)	9.8* (0.92)	+0.3 (-2.4, +2.9)	-0.7 (-3.3, +1.9)	-1.0 (-3.7, +1.8)			
	24	10.0 (1.14)	9.5 (1.03)	9.8 (0.92)	+0.2 (-2.5, +3.0)	+0.1 (-2.5, +2.7)	-0.1 (-3.0, +2.8)			
	36	9.8 (1.03)	10.3 (0.95)	7.0* (0.85)	+2.9 (+0.4, +5.5)	+3.8 (+1.4, +6.2)	+0.9 (-1.8, +3.5)			
P-value (time) ^{1,3}				< 0.001						
P-value (group) ^{2,4}				< 0.001						
HDRS	0	15.8 (0.49)	15.4 (0.48)	15.8 (0.43)	0	0	0			
	7	11.3* (0.61)	10.7* (0.60)	12.6* (0.57)	-1.4 (-2.9, +0.1)	-1.8 (-3.3, -0.3)	-0.4 (-2.0, +1.1)			
	12	11.4 (0.68)	10.5 (0.65)	12.5 (0.60)	-1.2 (-2.9, +0.5)	-1.9 (-3.6, -0.3)	-0.7 (-2.5, +1.0)			
	36	10.7 (0.66)	10.8 (0.62)	9.0* (0.58)	+1.8 (+0.1, +3.5)	+1.9 (+0.3, +3.5)	+0.1 (-1.6, +1.9)			
P-value (time) ^{1,3}				< 0.001						
P-value (group) ^{2,4}				< 0.001						
Anxiety symptoms										
SCL-90-Anx	0	1.27 (0.07)	1.26 (0.07)	1.19 (0.06)	0	0	0			
	3	1.03* (0.07)	1.02* (0.07)	1.03* (0.07)	-0.05 (-0.20, +0.10)	-0.06 (-0.20, +0.09)	-0.01 (-0.16, +0.15)			
	7	0.94 (0.08)	0.86* (0.08)	1.01 (0.07)	-0.12 (-0.30, +0.06)	-0.19 (-0.37, -0.01)	-0.07 (-0.26, +0.12)			
	9	0.87 (0.08)	0.82 (0.07)	0.93 (0.07)	-0.11 (-0.28, +0.05)	-0.15 (-0.31, +0.01)	-0.04 (-0.21, +0.14)			
	12	0.90 (0.08)	0.82 (0.07)	0.91 (0.07)	-0.06 (-0.24, +0.11)	-0.13 (-0.30, +0.04)	-0.07 (-0.25, +0.11)			

Table 3. Mean score levels (s.e.) of psychiatric symptoms in treatment groups and mean score differences (95% confidence interval) between the treatment groups (cont).

	18	0.86 (0.07)	0.74 (0.07)	0.79* (0.07)	+0.01 (-0.18, +0.19)	-0.10 (-0.27, +0.08)	-0.10 (-0.29, +0.09)
	24	0.94 (0.09)	0.83 (0.08)	0.77 (0.07)	+0.10 (-0.10, +0.30)	+0.02 (-0.17, +0.20)	-0.09 (-0.29, +0.12)
	36	0.82 (0.07)	0.82 (0.07)	0.58* (0.06)	+0.19 <u>(-0.00, +0.38)</u>	<u>+0.20</u> <u>(+0.02, +0.38)</u>	+0.01 (-0.19, +0.21)
P-value (time) ^{1,3}				< 0.001			
P-value (group) ^{2,4}				0.08			
HARS	0	14.9 (0.53)	15.0 (0.52)	14.8 (0.46)	0	0	0
	7	10.8* (0.57)	10.2* (0.56)	11.7* (0.53)	-1.1 (-2.5, +0.4)	<u>-1.6</u> <u>(-3.0, -0.2)</u>	-0.5 (-2.0, +0.9)
	12	10.7 (0.62)	9.8 (0.59)	11.2 (0.55)	-0.6 (-2.1, +1.0)	<u>-1.5</u> <u>(-3.0, +0.0)</u>	-0.9 (-2.5, +0.7)
	36	10.2 (0.59)	9.6 (0.55)	8.2* (0.52)	<u>+2.0</u> <u>(+0.5, +3.5)</u>	+1.3 (-0.1, +2.8)	-0.7 (-2.2, +0.9)
P-value (time) ^{1,3}				< 0.001			
P-value (group) ^{2,4}				0.003			
Total symptoms							
SCL-90-GSI	0	1.31 (0.05)	1.27 (0.05)	1.27 (0.05)	0	0	0
	3	1.03* (0.06)	1.05* (0.06)	1.09* (0.05)	-0.11 (-0.22, +0.01)	-0.05 (-0.17, +0.06)	+0.05 (-0.07, +0.17)
	7	0.92* (0.06)	0.91* (0.06)	1.04 (0.06)	<u>-0.16</u> <u>(-0.30, -0.01)</u>	<u>-0.14</u> <u>(-0.28, -0.00)</u>	+0.01 (-0.13, +0.16)
	9	0.85 (0.06)	0.83* (0.06)	0.97* (0.05)	<u>-0.15</u> <u>(-0.29, -0.01)</u>	<u>-0.14</u> <u>(-0.28, -0.01)</u>	+0.01 (-0.14, +0.15)
	12	0.89 (0.06)	0.81 (0.06)	0.95 (0.05)	-0.10 (-0.24, +0.04)	<u>-0.15</u> <u>(-0.28, -0.01)</u>	-0.05 (-0.19, +0.10)
	18	0.82 (0.07)	0.79 (0.06)	0.82* (0.06)	-0.04 (-0.19, +0.12)	-0.04 (-0.19, +0.11)	-0.00 (-0.16, +0.16)
	24	0.93 (0.07)	0.86 (0.07)	0.83 (0.06)	+0.06 (-0.11, +0.23)	+0.02 (-0.13, +0.18)	-0.04 (-0.21, +0.14)
	36	0.85 (0.06)	0.84 (0.06)	0.68* (0.05)	+0.15 (-0.01, +0.31)	<u>+0.16</u> <u>(+0.01, +0.32)</u>	+0.01 (-0.16, +0.18)
P-value (time) ^{1,3}				< 0.001			
P-value (group) ^{2,4}				0.008			

¹ Basic model.

² Basic model adjusted for the baseline level of the outcome measure considered.

³ P-value for time difference for the treatment groups combined.

⁴ P-value for group difference over time.

* A statistically significant change occurred in comparison with the value at the previous time point.

Underlined entries have p-values < 0.05.

A total of 4 patients were excluded from the analyses because of missing values at baseline.

Table 4. Recovery from diagnosis among individuals with respective diagnosis at baseline by treatment groups during the 3-year follow-up.

Outcome variable	Time (month)	Mean prevalence ¹ (%)			OR ² (95% confidence interval)		
		Solution-focused Therapy (SFT) (N=97)	Short-term psychodynamic psychotherapy (SPP) (N=101)	Long-term psychodynamic psychotherapy (LPP) (N=128)	SFT vs LPP	SPP vs LPP	SPP vs SFT
Axis I	7	24 (4.6)	29 (4.8)	12 (3.3)	<u>2.24</u> (1.03,4.85)	<u>2.90</u> (1.37,6.14)	1.30 (0.66,2.55)
	12	29 (5.1)	31 (4.9)	11 (3.4)	<u>3.20</u> (1.42,7.23)	<u>3.52</u> (1.59,7.81)	1.10 (0.57,2.13)
	36	35 (5.7)	36 (5.4)	48* (5.2)	0.59 (0.31,1.11)	0.62 (0.34,1.14)	1.05 (0.54,2.06)
P-value (time) ³				< 0.001			
P-value (group) ⁴				0.002			
Mood Disorder	7	29 (5.4)	30 (5.5)	13 (3.5)	<u>2.86</u> (1.27,6.44)	<u>3.04</u> (1.35,6.84)	1.06 (0.52,2.19)
	12	35 (5.6)	33 (5.6)	17 (4.1)	<u>2.66</u> (1.25,5.65)	<u>2.41</u> (1.13,5.16)	0.91 (0.45,1.82)
	36	36 (6.2)	38 (6.0)	46* (5.5)	0.65 (0.33,1.29)	0.70 (0.36,1.36)	1.08 (0.52,2.24)
P-value (time) ³				<0.001			
P-value (group) ⁴				0.01			
Major Depressive Disorder	7	32 (6.1)	30 (6.3)	13 (3.7)	<u>3.31</u> (1.40,7.84)	<u>2.94</u> (1.21,7.12)	0.89 (0.40,1.98)
	12	41 (6.5)	34 (6.5)	23* (5.1)	<u>2.35</u> (1.08,5.11)	1.75 (0.78,3.91)	0.75 (0.34,1.62)
	36	43 (6.9)	50* (7.0)	51* (5.9)	0.72 (0.35,1.48)	0.97 (0.48,1.99)	1.35 (0.62,2.95)
P-value (time) ³				< 0.001			
P-value (group) ⁴				0.05			
Anxiety Disorder	7	43 (7.9)	57 (8.5)	28 (7.7)	1.89 (0.71,5.02)	<u>3.39</u> (1.24,9.28)	1.79 (0.71,4.53)
	12	54 (8.2)	60 (7.6)	49* (8.4)	1.23 (0.49,3.09)	1.58 (0.64,3.91)	1.28 (0.52,3.14)
	36	65 (8.1)	67 (7.6)	90* (5.9)	<u>0.21</u> (0.05,0.88)	<u>0.23</u> (0.06,0.96)	1.10 (0.42,2.88)
P-value (time) ³				< 0.001			
P-value (group) ⁴				0.04			

¹ Basic model.

² Basic model adjusted for the baseline level of the outcome measure considered; latter group is the reference group.

³ P-value for time difference for the treatment groups combined.

Table 4. Recovery from diagnosis among individuals with respective diagnosis at baseline by treatment groups during the 3-year follow-up (cont).

⁴ P-value for group difference over time.

* A statistically significant change occurred in comparison with the value at the previous time point.
Underlined entries have p-values < 0.05.

Figure 1. Number of patients assessed for eligibility, assigned to study group, and completed the protocol

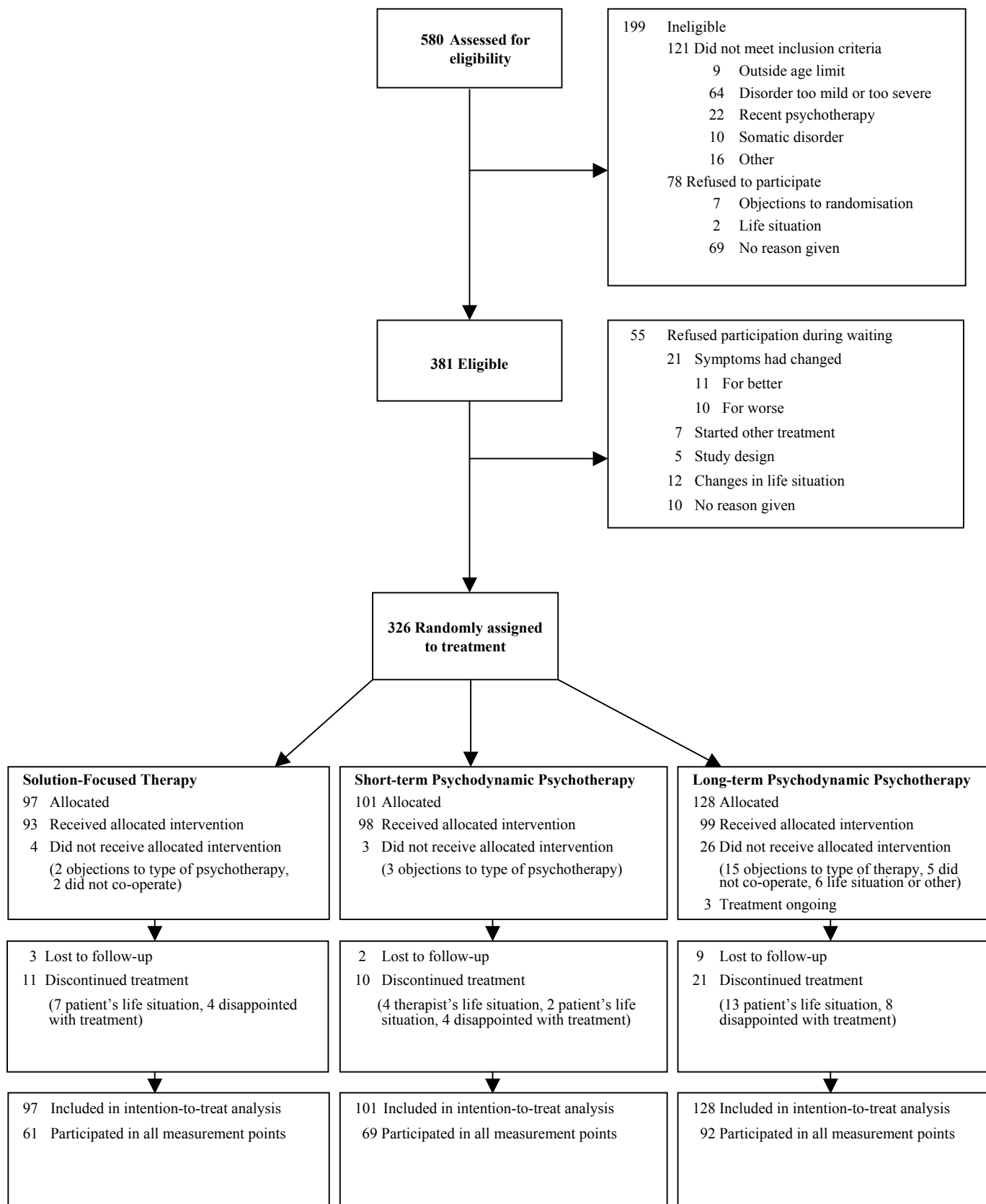
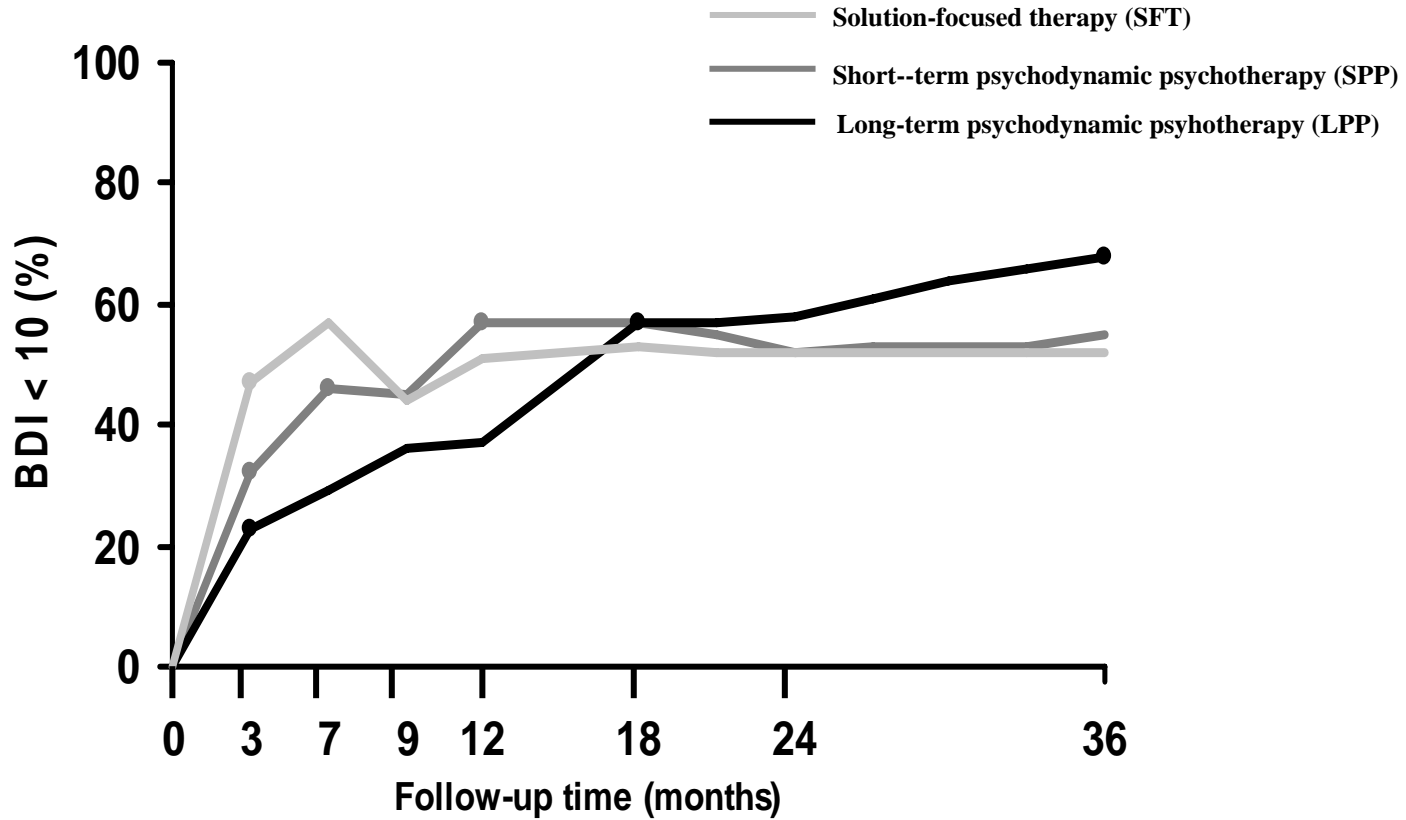


Figure 2. Remission from depressive symptoms (BDI) (● statistically significant difference from preceding point of time, *statistically significant difference between groups)



Number of patients

SFT	97	86	88	82	89	73	71	76
SPP	101	92	91	82	91	77	83	83
LPP	128	99	101	94	115	93	102	107

Odds ratios between therapies

SFT vs LPP	3.07*	3.21*	1.43	1.77	0.82	0.79	0.51
SPP vs LPP	1.60	2.10*	1.46	2.21*	0.99	0.79	0.57
SPP vs SFT	0.52	0.66	1.02	1.25	1.22	0.99	1.13