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# Subjective outcomes of psychotherapeutic interventions: a naturalistic follow-up study among Finnish adolescent psychiatric outpatients

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## Abstract

In adolescence, the prevalence of mental disorders doubles compared to childhood and the need for interventions to reduce psychological symptoms increases. Most evidence-based psychotherapeutic interventions are focused on single conditions, but in clinical practice most patients suffer from psychiatric comorbidity. However, research on effective treatment interventions for adolescents in a naturalistic setting is scarce. The aim of this three-month follow-up study was to investigate subjective outcomes of psychotherapeutic interventions in a naturalistic setting among adolescent psychiatric outpatients. The intention was to also find out if verbally performed psychotherapies were more effective than art and occupational therapies in symptom reduction. Further, to investigate whether the frequency of intervention or the severity of self-reported depressive symptoms were related to treatment effect.

This study was conducted at the Helsinki University Central Hospital, Department of Adolescent Psychiatry. The study is part of an ongoing longitudinal study focusing on the effectiveness of psychotherapeutic interventions, started in February 2012. The sample comprised 58 adolescents, with a mean age of 14.2 years, referred to psychotherapy or to art and occupational therapies. The Beck Depression Inventory (BDI), the Strengths and Difficulties Questionnaire (SDQ) and the Clinical Outcomes in Routine Evaluation-Outcome-Measure (CORE-OM) were used as self-assessments both at baseline and the follow-up.

The adolescents experienced symptom reduction during the first months of psychotherapeutic treatment. Symptom reduction was related to the frequency, but not to the form, of psychotherapeutic intervention. The life functioning of adolescents with severe depression improved more than those with only mild or moderate depression.

In conclusion, psychotherapeutic interventions are effective in reducing the subjective symptoms of clinically referred adolescents with psychiatric disorders. Art and occupational therapies are as effective as psychotherapies in reducing symptoms. The frequency of intervention, as well as the level of depression prior to the intervention, seems to modify the outcome.

## **Introduction**

In adolescence, the prevalence of mental disorders doubles compared to childhood and the need for interventions increases. Psychotherapy is a goal-directed, interactive intervention based on theoretic knowledge, focusing on client's affect, cognitions and behaviour, and is designed to decrease distress, psychological symptoms and maladaptive behaviour, as well as improve adaptive and pro-social functioning (1). Verbally oriented interventions can, however, be too demanding or insufficient for some adolescents, so it is equally important to offer interventions like music, art and occupational therapies, which combine functional elements and provide the opportunity for non-verbal processing.

Therapeutic intervention studies have mostly defined effectiveness as a decrease in symptom severity (2). The majority of outcome studies have reported positive results suggesting that more than 70% of adolescents receiving therapy show better outcomes than those in control groups (3, 4). The result seems, however, to depend on who is the evaluator, since only minimal agreement between adolescents and their parents on individual outcome domains have been reported (2). Adolescents seem to report improvement more frequently than their parents or therapists (5). There is also some evidence that adolescents might be better reporters of internalizing problems and more sensitive in reporting changes than adults (6). Treatment effectiveness is likely to depend not only on the treatment technique or type of psychiatric disorder, but also on the variety of client-, therapist- and treatment process-related variables (7). It has even been stated that the common factors show more impact on the

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outcome than specific therapeutic techniques (8). Research focusing on the relationship between therapy frequency and treatment outcome is still highly limited (3, 9). It seems that change tends to occur earlier rather than later in the treatment process, and that the client's subjective experience of meaningful change during the first sessions is critical (10). According to Asay et al. (3), adolescent patients improve faster and require less therapy to reach change than adults: half of the adolescents in the study achieved a reliable change within 7 sessions and a clinically significant change within 14 sessions.

Most evidence-based psychotherapies are focused on single conditions, but in clinical practice most patients suffer from psychiatric comorbidity (11-13). However, research on effective treatment interventions for adolescents with psychiatric comorbidity is scarce (11). Further, youth psychotherapy research has not focused too much on the patients or contexts of actual clinical care (14). In a recent review comprising more than 460 randomized clinical trials of child and adolescent psychotherapy, only 2.1% of the samples were described as involving clinically referred patients (15).

Psychotherapies shown to be evidence-based may not be widely provided in clinical practice. On the other hand, many treatments commonly used are not represented in research literature. This has led to a situation where there is growing evidence for treatment interventions that are not widely used or available, and weak evidence for treatments that are generally used in everyday clinical practice (1, 13). In order to fill the gap between psychotherapy research and clinical practice, and to gain understanding of the effects of therapeutic interventions in the so-called "real world", it is essential to examine treatment outcomes in a naturalistic setting (2, 6, 14). The factors that an experimentalist might view as disadvantages, and because of this, attempt to avoid or control, might be exactly the factors which are needed in developing therapeutic interventions that work in everyday practice (13). Further, as most psychotherapy studies performed among under-age patients comprise both children and adolescents (12), it is important to perform studies focusing entirely on adolescents.

The aim of this follow-up study was to investigate subjective outcomes of psychotherapeutic interventions in a naturalistic setting among adolescent psychiatric outpatients. We also sought to determine whether verbally performed psychotherapies were more effective than art and occupational therapies in symptom reduction. Further, we investigated whether the frequency of intervention or the severity of self-reported depressive symptoms were related to treatment effect.

## Method

### Design

This three-month follow-up study was conducted at the Helsinki University Central Hospital, Department of Adolescent Psychiatry. The study is part of an ongoing longitudinal study focusing on the effectiveness of psychotherapeutic interventions, started in February 2012. The study was conducted as part of ordinary outpatient care.

### Procedure

All 13-to 15-year-old, native Finnish-speaking adolescents who were referred to therapy by private practitioners during a two-year period (1 February 2012 to 31 January 2014) were asked to participate in the study. Originally, the adolescents had been referred to municipal adolescent psychiatric evaluation by their GPs. As part of the evaluation or treatment at the municipal unit, the adolescent's need for therapy arose. The therapies were outsourced (bought from private practitioners), which is the usual way to actualize the psychotherapy for patients under 16 years old in the hospital district. The overall medical responsibility, including medication, remained with the municipal unit, which referred the patient to the index therapy. The adolescent filled in the questionnaires after completing the assessment for the therapy with the therapist who was going to start the therapy with (1-3 consulting sessions), and again after three months of treatment.

### Participants

There were altogether 82 adolescents, of whom 61 (70.7%) agreed to participate. Psychiatric diagnoses were assessed by psychiatrists using the ICD-10 classification (16). Altogether, 59 adolescents started the interventions and 58 adolescents filled in the self-assessments in both the initial phase and the follow-up. Demographics and sample characteristics are presented in Table 1. The sample did not significantly differ in background variables such as age ( $p=.25$ ), gender ( $p=.13$ ) or primary diagnosis ( $p=.32$ ) from the average patient population receiving publicly funded psychotherapeutic interventions in the region (17).

**Table 1. Demographics and sample characteristics of the 58 adolescents referred to psychotherapeutic interventions\*.**

	Form of the intervention		Frequency of the intervention		Level of depression measured with the BDI			Total
	psychotherapy	art/music/ occupational/ riding therapy	once a week or more seldom	twice a week	non- depressive mood/mild depression	moderate depression	severe depression	
Age, mean (SD)	14.2 (0.75)	14.2 (0.70)	14.2 (0.74)	14.2 (0.73)	14.2 (0.78)	14.5 (0.52)	14.1 (0.74)	14.2 (0.73)
Gender: female	25 (67.6)	13 (61.9)	19 (65.5)	19 (65.5)	20 (54.1)	8 (72.7)	10 (100.0)	38 (65.5)
<i>Diagnostic groups according to the principal diagnoses (ICD-10)</i>								
F30-39 Mood disorders	10 (27.0)	6 (28.6)	6 (20.7)	10 (34.5)	6 (16.2)	5 (45.5)	5 (50.0)	16 (27.6)
F40-49 Neurotic, stress-related and somatoform disorders	17 (45.9)	8 (38.1)	13 (44.8)	12 (41.4)	17 (45.9)	6 (54.5)	2 (20.0)	25 (43.1)
F50-59 Behavioural syndromes associated with physiological disturbances and physical factors	2 (5.4)	0 (0.0)	2 (6.9)	0 (0.0)	1 (2.7)	0 (0.0)	1 (10.0)	2 (3.4)
F80-89 Disorders of psychological development	2 (5.4)	1 (4.8)	1 (3.4)	2 (6.9)	3 (8.1)	0 (0.0)	0 (0.0)	3 (5.2)
F90-98 Behavioural and emotional disorders	6 (16.2)	6 (28.6)	7 (24.1)	5 (17.2)	10 (27.0)	0 (0.0)	2 (0.0)	12 (20.7)
Psychiatric comorbidity	16 (43.2)	12 (57.1)	15 (51.7)	13 (44.8)	19 (51.4)	5 (45.5)	4 (40.0)	28 (48.3)
Psychotropic medication	23 (62.2)	15 (71.4)	19 (65.5)	19 (65.5)	21 (56.8)	9 (81.8)	8 (80.0)	38 (65.5)
Length of the municipal adolescent psychiatric treatment period before the index intervention, months, mean (SD)	7.9 (5.44)	12.1 (5.83)	10.6 (5.81)	8.2 (5.83)	9.3 (5.69)	8.5 (6.01)	10.6 (6.90)	9.4 (5.89)
Total	37 (63.8)	21 (36.2)	29 (50.0)	29 (50.0)	37 (63.8)	11 (19.0)	10 (17.2)	58 (100.0)

\*Unless otherwise indicated, data are expressed as number (percentage).

## Intervention

There were altogether 47 treatment providers, who represented a number of disciplines and various levels of experience. They were all trained and certified for the given form of therapy. One therapist treated four patients, one treated three, seven treated two and the remaining 38 treated one patient each. The interventions included psychodynamic (n=22), cognitive (n=5), crisis- and trauma-focused (n=3), family (n=7), music (n=10), art (n=5), occupational (n=4), and riding therapy (n=2). Altogether, 81.0% of the participants received individual therapy, 12.1% family therapy and 6.9% group therapy. No standard treatment protocol was demanded.

## Measures

The *Beck Depression Inventory (BDI)* (18) was used to assess subjective depressive symptoms. Each of the 21 items is scored from 0 to 3, and the items are summed for a total score ranging from 0 to 63. The total score reflects the level of depression: 0-9 points refer to non-depressive mood, 10-15 to mild depression, 16-23 to moderate depression and 24-63 to severe depression. The BDI has been widely used in studies concerning adolescents and has shown good psychometric properties in multiple studies (19). In this study, the internal consistency of the questionnaire also proved to be good (Cronbach's alpha .95).

The *Strengths and Difficulties Questionnaire (SDQ)* is a self-assessment measuring psychosocial symptoms in children and adolescents (20). It contains 25 statements and each of them can be evaluated using a 3-point Likert Scale from 0 to 2. The SDQ comprises five scales: emotional symptoms, conduct problems, hyperactivity, peer problems and pro-social scale. The score for each scale is generated by summing the scores of five statements. The scores of the first four scales are summed to comprise a total difficulties score, which ranges from 0 to 40. The SDQ has been widely used among adolescents, and its reliability and validity have been demonstrated to be good (21, 22). The internal consistency of the questionnaire also proved to be good in this study (Cronbach's alpha .78).

The *Clinical Outcomes in Routine Evaluation-Outcome Measure CORE-OM* (23) is a self-report questionnaire to measure psychological distress. The patient evaluates 34 statements using a 5-point Likert Scale. Each statement is scored from 0 to 4, so the total score can range from 0 to 136. The CORE-OM includes four scales: subjective well-being (4 items), problems/symptoms (12 items), life functioning (12 items) and risk/harm (6 items). The score for each scale is the mean total score of the items. In this study, the internal consistency of the questionnaire proved to be good (Cronbach's alpha .96).

## Ethics

The study was accepted by the Ethics Committee of the Helsinki and Uusimaa Hospital District. The permission to conduct the study was granted by the pertinent institutional authorities of the Helsinki University Hospital. All participants and their guardians provided their written consent after receiving verbal and written information about the study.

## Data analysis

The sample was grouped by the form of psychotherapeutic intervention (psychotherapy:  $n=37$ ; art, music, occupational and riding therapy:  $n=21$ ), by the frequency of the intervention (once a week or more seldom:  $n=29$ ; twice a week:  $n=29$ ) and by the level of self-reported depression (non-depressive mood /mild:  $n=37$ ; moderate:  $n=11$ ; severe:  $n=10$ ).

Statistical analyses were carried out using Pearson's chi-squared test, independent samples t-test, binary logistic regression, and cross tabulation. Data inspection revealed that all the assumptions (as normal distribution) of these tests were met. To examine if there was an effect with the psychotherapeutic interventions, as one group or inside any of the formed groups, after the first three months of treatment, we conducted dependent samples t-test. To examine if the change in symptoms after the three-month treatment differed between the groups, we used analysis of covariance with adjusted baseline variables. Self-reported depression was treated as a continuous variable for the analysis. The possible effect of the medication was controlled for in the results. The level of significance was defined as  $p < .05$ . We used Cohen's  $d$  and Partial Eta Squared to estimate the effect sizes. The magnitude of Cohen's  $d$  was interpreted as follows: 0.2-0.5 small, 0.5-0.8 medium,  $>0.8$  large, and, respectively, the magnitude of Partial Eta Squared was interpreted as: 0.01-0.06 small, 0.06-0.14 medium,  $>0.14$  large (24).

## Results

There were no significant relationships between the form and frequency of interventions and the level of self-reported depressive symptoms so they could be examined separately. The level of self-reported depression was related to medication ( $p=.020$ ) and gender: girls reported more depressive symptoms than boys ( $p=.007$ ). Adolescents referred to art, music, occupational and riding therapy had undergone a significantly longer treatment period in municipal adolescent psychiatry prior to their referrals than those referred to psychotherapy ( $p=.008$ ). Otherwise, the groups did not significantly differ in any background variables or self-reported baseline symptoms.

### **The effect of psychotherapeutic interventions on symptom reduction**

The outcome measures of the adolescents prior to, and after, the three-month treatment are presented in Table 2. Self-rated depressive symptoms (BDI), the scale score of emotional symptoms in the SDQ and well-being in the CORE-OM decreased significantly. Further, the score of peer problems in the SDQ, the score of risk/harm in the CORE-OM and the CORE-OM total score almost reached statistical significance.

### **The form of psychotherapeutic intervention and symptom reduction**

Comparisons between adolescents referred to psychotherapy and those referred to art, music, occupational or riding therapy are presented in Table 3. Among adolescents who received psychotherapy, self-rated depressive symptoms and the score of well-being in the CORE-OM decreased significantly during the three-month treatment. The score of peer problems in the SDQ also decreased, but the change was not statistically significant. Among the adolescents with other forms of therapy, no statistically significant changes were observed. The score of emotional symptoms in the SDQ almost reached statistical significance. The form of psychotherapeutic intervention did not significantly predict the difference in change in symptom reduction between the groups.



**Table 2. Outcome measures of 58 adolescent patients prior to and after the three-month treatment.**

	Initial phase	Follow-up	p	Effect size (d)
BDI, mean (SD)	14.31 (13.62)	11.91 (11.99)	.02	.19
SDQ				
emotional symptoms	4.86 (2.81)	4.34 (2.71)	.05	.19
conduct problems	2.16 (1.69)	1.94 (1.42)	.23	.14
hyperactivity	4.14 (2.22)	4.09 (2.12)	.80	.02
peer problems	2.98 (1.96)	2.91 (2.04)	.06	.03
pro-social	7.78 (2.21)	7.78 (1.64)	1.00	<.01
Total	13.88 (5.74)	13.29 (5.25)	.22	.11
CORE-OM				
well-being	1.64 (0.99)	1.31 (0.98)	<.001	.34
problems/symptoms	1.44 (1.01)	1.37 (0.98)	.51	.07
life functioning	1.43 (0.76)	1.30 (0.76)	.14	.17
risk/harm	0.48 (0.68)	0.35 (0.50)	.08	.22
Total	1.30 (0.79)	1.16 (0.75)	.09	.18

BDI=the Beck Depression Inventory, SDQ=the Strengths and Difficulties Questionnaire, CORE-OM=the Clinical Outcomes in Routine Evaluation-Outcome Measure. Effect sizes were measured using Cohen's d (d).

## The frequency of psychotherapeutic intervention and symptom reduction

Comparisons between those adolescents who received therapy once a week or more seldom, and those who received it twice a week are presented in Table 4. In the group with lower frequency, none of the observed changes were statistically significant. However, the score of problems/symptoms in the CORE-OM almost reached statistical significance. In the group with higher frequency of treatment, the change was statistically significant in most of the outcome measures: self-rated depressive symptoms, the scores of emotional symptoms and peer problems in the SDQ, and well-being, problems/symptoms and life functioning in the CORE-OM decreased. The CORE-OM total score also decreased significantly. The frequency of treatment predicted the difference in change in symptom reduction between the groups. The difference was significant for self-rated depressive symptoms, for the CORE-OM total score and the scores of problems/symptoms and life functioning in the CORE-OM. The score of well-being in the CORE-OM almost reached statistical significance.

**Table 3. Comparisons between adolescents referred to psychotherapy (n=37) and referred to art/music/occupational/riding therapy (n=21).**

	Psychotherapy				Art/music/occupational/riding therapy				Difference in change between the groups		
	Initial phase	Follow-up	p	Effect size (d)	Initial phase	Follow-up	p	Effect size (d)	F	p	Effect size ( $\eta^2$ )
BDI, mean (SD)	14.41 (12.88)	11.59 (11.46)	.03	.23	14.14 (15.15)	12.48 (13.15)	.38	.12	0.37	.55	.01
SDQ											
emotional symptoms	5.11 (2.74)	4.65 (2.71)	.20	.17	4.43 (2.96)	3.81 (2.68)	.10	.22	0.31	.58	.01
conduct problems	2.03 (1.62)	1.86 (1.44)	.45	.11	2.38 (1.83)	2.10 (1.41)	.34	.17	0.00	.99	<.01
hyperactivity	3.95 (1.97)	3.78 (1.81)	.56	.09	4.48 (2.62)	4.62 (2.54)	.65	.05	1.22	.28	.02
peer problems	3.19 (2.03)	3.05 (2.12)	.09	.07	2.62 (1.80)	2.67 (1.91)	.47	.03	0.26	.61	.01
pro-social	7.92 (2.48)	7.95 (1.60)	.94	.01	7.52 (1.66)	7.48 (1.72)	.82	.02	0.57	.45	.01
Total	14.00 (5.32)	13.35 (4.85)	.30	.18	13.67 (6.55)	13.19 (6.01)	.53	.08	0.17	.90	<.01
CORE-OM											
well-being	1.69 (0.98)	1.31 (1.04)	<.001	.38	1.56 (1.04)	1.32 (0.90)	.25	.25	0.25	.62	.01
problems/symptoms	1.54 (0.97)	1.45 (0.95)	.53	.09	1.26 (1.07)	1.23 (1.03)	.83	.03	0.00	.97	<.01
life functioning	1.41 (0.76)	1.29 (0.77)	.25	.16	1.47 (0.77)	1.32 (0.75)	.36	.20	0.00	.98	<.01
risk/harm	0.49 (0.68)	0.41 (0.57)	.32	.13	0.46 (0.69)	0.25 (0.34)	.14	.39	1.55	.22	.03
Total	1.33 (0.77)	1.20 (0.76)	.17	.17	1.24 (0.82)	1.10 (0.75)	.31	.18	0.02	.89	<.01

**Table 4. Comparisons between adolescents receiving therapy once a week or more seldom (n=29) and receiving therapy twice a week (n=29).**

	Once a week or more seldom				Twice a week				Difference in change between the groups		
	Initial phase	Follow-up	p	Effect size (d)	Initial phase	Follow-up	p	Effect size (d)	F	p	Effect size ( $\eta^2$ )
BDI, mean (SD)	11.83 (13.24)	12.31 (13.64)	.67	.04	16.79 (13.76)	11.52 (10.31)	<.001	.43	6.84	.01	.11
SDQ											
emotional symptoms	4.17 (2.90)	3.93 (2.90)	.52	.08	5.55 (2.59)	4.76 (2.47)	.04	.31	0.20	.66	<.01
conduct problems	2.24 (1.62)	2.00 (1.36)	.28	.16	2.07 (1.79)	1.90 (1.50)	.53	.10	0.00	.97	<.01
hyperactivity	4.66 (2.35)	4.38 (2.27)	.29	.12	3.62 (1.99)	3.79 (1.95)	.60	.09	0.06	.80	<.01
peer problems	2.66 (1.95)	2.69 (1.97)	.63	.02	3.31 (1.95)	3.14 (2.12)	.01	.08	0.11	.74	<.01
pro-social	7.97 (2.56)	7.76 (1.83)	.62	.09	7.59 (1.82)	7.79 (1.47)	.50	.12	0.23	.63	<.01
Total	13.38 (6.01)	13.00 (5.86)	.56	.06	14.38 (5.52)	13.59 (4.66)	.25	.15	0.03	.87	<.01
CORE-OM											
well-being	1.43 (1.04)	1.34 (1.13)	.51	.08	1.86 (0.92)	1.28 (0.83)	<.001	.66	3.72	.06	.07
problems/symptoms	1.67 (0.99)	1.39 (1.12)	.06	.26	1.71 (0.96)	1.36 (0.84)	.02	.39	6.44	.01	.11
life functioning	1.30 (0.80)	1.37 (0.84)	.55	.09	1.57 (0.70)	1.23 (0.68)	.01	.49	4.43	.04	.08
risk/harm	0.36 (0.62)	0.30 (0.49)	.42	.11	0.61 (0.72)	0.41 (0.51)	.13	.32	0.00	.99	<.01
Total	1.43 (1.04)	1.18 (0.85)	.38	.26	1.86 (0.92)	1.14 (0.66)	<.001	.90	6.24	.02	.10

BDI=the Beck Depression Inventory, SDQ=the Strengths and Difficulties Questionnaire,

CORE-OM=the Clinical Outcomes in Routine Evaluation-Outcome Measure.

Effect sizes were measured using Cohen's d (d) and Partial Eta Squared ( $\eta^2$ ).

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## The level of self-reported depression and symptom reduction

Comparisons between adolescents with non-depressive mood or mild depression, those with moderate depression and those with severe depression are reported in Table 5. In the group with none or only few depressive symptoms, none of the observed changes reached statistical significance. Among adolescents who were moderately depressed, the change was statistically significant for emotional symptoms in the SDQ and for well-being in the CORE-OM. Self-rated depressive symptoms and the scores of risk/harm and problems/symptoms in the CORE-OM also decreased, but the change was not statistically significant. Among severely depressed adolescents, the change was statistically significant for self-rated depressive symptoms as well as for the score of peer problems in the SDQ. Further, statistically significant differences were observed in the total score and in the scores of well-being, life functioning and risk/harm in the CORE-OM. The SDQ total score almost reached statistical significance. The level of self-reported depression predicted a difference in change between the groups in depressive symptoms and in the score of life functioning in the CORE-OM.

**Table 5. Comparisons between the adolescents with non-depressive mood or mild depression (n=37), moderate depression (n=11) and severe depression (n=10) measured with the BDI.**

	Non-depressive mood or mild depression				Moderate depression			
	Initial phase	Follow-up	p	Effect size (d)	Initial phase	Follow-up	p	Effect size (d)
BDI, mean (SD)	5.49 (4.24)	5.76 (5.42)	.71	.06	22.27 (3.98)	17.27 (10.76)	.09	.62
SDQ								
emotional symptoms	3.43 (2.33)	3.35 (2.49)	.64	.05	7.00 (1.48)	5.73 (1.74)	.01	.79
conduct problems	1.62 (1.28)	1.70 (1.27)	.62	.06	2.45 (1.69)	2.09 (1.30)	.34	.24
hyperactivity	3.76 (2.01)	3.54 (1.91)	.32	.11	4.45 (2.11)	5.55 (1.86)	.11	.55
peer problems	2.65 (1.87)	2.68 (1.78)	.68	.02	2.55 (1.21)	2.55 (1.97)	.40	<.01
pro-social	8.22 (2.23)	8.00 (1.53)	.52	.12	6.82 (2.27)	7.27 (1.42)	.52	.24
Total	11.12 (4.28)	11.22 (4.64)	.96	.02	16.45 (4.41)	15.91 (4.18)	.69	.13
CORE-OM								
well-being	1.09 (0.63)	0.91 (0.69)	.15	.27	2.19 (0.64)	1.75 (0.71)	.03	.65
problems/symptoms	0.87 (0.68)	0.99 (0.78)	.36	.16	2.18 (0.61)	1.82 (0.80)	.06	.51
life functioning	1.09 (0.58)	1.00 (0.57)	.38	.16	1.57 (0.53)	1.64 (0.62)	.74	.12
risk/harm	0.12 (0.20)	0.18 (0.28)	.31	.25	0.87 (0.47)	0.52 (0.35)	.07	.84
Total	0.84 (0.45)	0.84 (0.54)	.95	<.01	1.74 (0.47)	1.52 (0.57)	.21	.42

BDI=the Beck Depression Inventory, SDQ=the Strengths and Difficulties Questionnaire,  
 CORE-OM=the Clinical Outcomes in Routine Evaluation-Outcome Measure.  
 Effect sizes were measured using Cohen's d (d) and Partial Eta Squared ( $\eta^2$ ).

Severe depression					Difference in change between the groups			
Initial phase	Follow-up	p	Effect size (d)	F	p	Effect size ( $\eta^2$ )		
38.20 (7.27)	28.80 (12.52)	.03	.92	107.09	<.001	.66	BDI, mean (SD)	
7.80 (1.55)	6.70 (2.26)	.27	.57	1.10	.30	.02	SDQ	
3.80 (2.04)	2.70 (1.89)	.12	.31	1.51	.22	.03	emotional symptoms	
5.20 (2.86)	4.50 (2.46)	.13	.26	0.46	.50	.01	conduct problems	
4.70 (2.16)	4.20 (2.66)	.04	.21	0.11	.74	<.01	hyperactivity	
7.20 (1.75)	7.50 (2.22)	.34	.15	0.43	.52	.01	peer problems	
21.00 (4.45)	18.10 (4.15)	.06	.67	0.32	.57	.01	pro-social	
							Total	
3.08 (0.60)	2.35 (1.24)	.03	.75	1.06	.31	.02	CORE-OM	
2.71 (0.63)	2.31 (1.01)	.16	.48	0.56	.46	.01	well-being	
2.54 (0.38)	2.03 (0.90)	.03	.74	4.89	.03	.08	problems/symptoms	
1.43 (0.88)	0.82 (0.86)	.03	.70	0.04	.84	<.01	life functioning	
2.47 (0.48)	1.95 (0.89)	.04	.73	0.67	.42	.01	risk/harm	
							Total	

## Discussion

The aim of this three-month follow-up study was to investigate subjective outcomes among adolescent psychiatric outpatients receiving psychotherapeutic interventions. The adolescents reported subjective symptom reduction after three months of therapy, so the effect of the treatment seemed to show rapidly. This supports the findings by Asay et al. (3) that adolescent patients improve faster and require less therapy to reach change than adults. The patient's subjective experience of meaningful change during the first sessions is critical for the positive outcome of (10) and increased commitment to therapy. Since approximately 28% to 75% of adolescents tend to drop out from therapies (25), or the therapies do not actualize as they planned, the possible benefit from therapy must be gained as early as possible. In our study, a large range of subjective symptom reduction was observed: some adolescents benefited a lot from the three-month treatment and some barely at all. There is a lack of research focusing on non-response and drop out, as well as on deterioration of health in therapy, even though it is known that up to one-third of

adolescents in therapy do not improve and 5% to 10% get even worse (26, 27). Therapists often encounter difficulties in identifying treatment processes which do not proceed (10). Important questions to be answered in the future include how to identify those adolescents who exhibit problems related to therapy, and how they can be helped to benefit more from it.

Art and occupational therapies turned out to be as effective as psychotherapies in reducing symptoms in adolescents with diverse mental disorders. Our finding strengthens the evidence that the form of therapeutic intervention is not so important in relation to effectiveness. One must, however, remember that our sample comprised patients in early adolescence and mid-adolescence. So, the result might not be generalizable to older adolescents, who typically exhibit better verbal skills. Patients receiving therapy twice a week reported better outcomes than those receiving it once a week or more seldom. This finding is in line with that of Angold et al. (28) who reported that the number of specialty mental health treatment sessions was related to symptom reduction. This suggests the need for more intensive treatments in municipal adolescent psychiatry.

More severely depressed adolescents reported greater change in life functioning than those with no depressive symptoms or mild depression. This finding was expected since adolescents who report being seriously depressed probably also exhibit more deficiency in their functioning in everyday life. Our finding implies, however, that psychotherapeutic interventions should already be provided to severely depressed adolescents at an early stage of their treatment.

An obvious strength of the present study is its naturalistic setting, and the fact that the patients participated in a variety of psychotherapeutic interventions; this represents the reality of ordinary clinical practice. In addition, the focus was on subjective experiences of the adolescents. The sample size was, however, relatively small, yet representative of patients receiving publicly funded psychotherapeutic interventions in the region. Some of the weakest results might be due to type 1 error, and more replication of the current study, possibly with larger samples, would be needed. The study also lacked a non-active control group. In clinical samples like this, adolescents usually experience such serious symptomatology that it would be unethical not to offer treatment interventions (5, 6, 28). The adolescents' aversion to different forms of interventions was coincidental, or the elements determining the recommendations were not captured in this study. More than one-third of the adolescents were treated with psychodynamic psychotherapy, since in Finland, most

psychotherapists represent this frame of reference. Since the present study divided the studied psychotherapeutic interventions with their umbrella terms, little can be said about effectiveness of specific psychotherapeutic interventions. Furthermore, the causal relationship between psychotherapeutic interventions and symptom reduction is not straightforward. The psychiatric diagnoses were not based on structured interviews, but, since clinical diagnoses were used only as background variables, we considered them to be accurate enough.

The BDI and the SDQ are both reliable, valid and widely used instruments in adolescent psychiatry. The CORE-OM was originally developed for adults. Our finding was, however, that it also seems to capture the change in symptoms quite well among adolescents. A youth version of the CORE (YP-CORE) has been published (29), but unfortunately, the Finnish version was not available at the beginning of our study. Even though the SDQ has been successfully used in service evaluation, the utility of it in clinical practice as an outcome measure has remained unclear (30), and in this study it did not seem to capture the change in symptoms very well. It should also be noted that, with small sample sizes, it might be that the change is clinically meaningful even though it does not reach statistical significance. Taken together, the results of this study should be regarded as indicative. Future studies with larger samples and longer follow-ups are clearly needed.

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