The influence of depressive symptoms on the efficacy of a short-term group form of Schema Cognitive Behavioural Therapy for personality disorders: A naturalistic study

David Koppers (david.koppers@inforsa.nl)
ARKIN https://orcid.org/0000-0002-9127-364X
Henricus Van
Arkin
Jaap Peen
Arkin
Jet Alberts
Arkin
Jack Dekker
Arkin

Research article

Keywords: Personality disorders; comorbidity; schematherapy; grouptherapy; effectiveness

Posted Date: December 18th, 2019

DOI: https://doi.org/10.21203/rs.2.11684/v2

Version of Record: A version of this preprint was published at BMC Psychiatry on June 1st, 2020. See the published version at https://doi.org/10.1186/s12888-020-02676-z.

Abstract

Background: This naturalistic study looked at the effect of comorbid depressive symptoms on the outcomes – at treatment termination and three-month follow-up – of Short-Term Schema Cognitive Behavioural Therapy in groups for personality disorders. Methods: We investigated 225 patients with personality disorders and comorbid depressive symptoms (PD-DEP) and patients without comorbidity (PD), focusing on symptom and schema severity and coping styles. We also measured the rate of symptom remission. The data obtained were subjected to multilevel analysis. Results: Psychiatric symptoms and maladaptive schemas improved in both patient groups. Effect sizes were moderate. It proved more difficult to improve coping styles. Symptom remission was achieved in the minority of the total sample There were no differences in outcome between PD and PD-DEP at treatment termination. Psychiatric symptoms were more severe among PD-DEP patients at follow-up. Conclusion: A short-term form of schema therapy in groups proved to be an effective approach for a broad group of patients with personality disorders, however, the majority of patients did not achieve symptom remission. This indicates that this type of short-term group therapy should be considered a valuable first step in a stepped-care model.

Background

The efficacy of individual psychotherapy for patients with personality disorders (PD) has been well demonstrated in several meta-analyses (1, 2, 3, 4).

Nevertheless, group psychotherapy is frequently advocated as an alternative to individual approaches because the symptoms of PD become apparent at an interpersonal level and it is therefore conceivable that they could be addressed more effectively during group interactions (5).

A few studies (6, 7, 8, 5) of short forms of group psychotherapy have indeed shown that patients could benefit. In addition, a group approach could be a cost-effective way to treat patients (9) and help to cut the long waiting lists for many PD services.

The schema therapy approach has been extended to other personality disorders (10) and to group therapies. We have found two naturalistic studies of effectiveness for personality disorders after a short form of group psychotherapy (20 sessions) in an outpatient setting: van Vreeswijk et al. (11) and Renner et al. (7) found a moderate (SCL-90-GSI; ES=0.66) and large effect size (SCL-90-GSI; ES=0.81) respectively.However, most effect studies of the treatment of personality disorders have failed to look at how comorbidity affects outcome, even though, in daily practice, many patients suffer from comorbid conditions, generally depressive disorders (12). Nevertheless, we have found only two studies (13, 14) that examine the impact of depressive symptoms on the treatment of personality disorders. Hellerstein *et al*, (13) found that comorbid dysthymic disorders impaired remission from personality disorders in long-term individual treatment. Renner et al. (14) found that patients with comorbid depression had more severe psychiatric and personality pathology at baseline and poorer treatment outcome after long-term

individual schema therapy. However, this was not due to comorbid depression but to the significantly higher general psychiatric symptomatology at baseline in the PD-DEP group. This finding suggests that severe baseline psychiatric pathology could be a strong predictor of treatment outcome.

As far as we know, the effect of comorbid depression on the outcome of short-term group therapy for PD has never been examined.

Therefor we studied the effectiveness of short-term Schema Cognitive Behavioural Therapy in groups (SCBT-g)(15) in an open cohort of patients with a personality disorder and with or without severe comorbid depressive symptoms. Our aim was to determine the role of depressive symptoms on psychiatric symptom severity at baseline, during treatment at treatment outcome and three month follow-up. Patients had one or more PD diagnoses and were all referred to a specialised service for the treatment of PD.

Our research questions were:

1. Are there pre-treatment differences between the sociodemographic and clinical characteristics of PD patients with and without severe depressive symptoms?
2. Could we identify relevant differences in the effects of therapy in personality disorder patients with and without comorbid depressive symptoms at treatment termination and at follow-up?

Methods

Study design

The current study used an open pre-post intervention design that can be used to determine the effectiveness of a single intervention (16). Patients were recruited from January 2012 through to December 2017 at the NPI Centre for Personality Disorders, a specialised service for PD treatment that is part of the Arkin mental health institute in Amsterdam. The study was granted an exemption from the provisions of the Medical Research Involving Human Subjects Act (Wmo) by the Medical Ethics Review Committee of VU University Medical Center in Amsterdam and approved by the ethics board of the mental health institute ARKIN in Amsterdam. All patients in the study gave informed consent.

Participants

Patients were referred to the NPI Centre for Personality Disorders by their general practitioner. The NPI Centre for Personality Disorders has a treatment programme consisting of three treatment pathways which differ in terms of treatment dosage and treatment length. Each treatment pathway consisted of a number of treatment modalities. After a clinical intake and a process of shared decision-making, patients are referred to one of the treatment modalities of these treatment pathways.

The Schema Cognitive Behavioural Therapy in groups (SCBT-g) is part of the short-term treatment pathway focusing on personality change (< 1 year treatment). Our study targets those patients who have only followed the SCBT-g treatment modality only. The inclusion criteria for SCBT-g were: age 18 to 65 years and fulfilment of the DSM-IV criteria for at least one PD. The diagnosis was made in clinical interviews. The exclusion criteria were: severe suicidality, antisocial personality disorder, severe somatic problems/illness, acute and disruptive psychosocial problems such as homelessness, no income or high debts and inability to participate in a group due to communication problems (stuttering, deafness or language barrier).

During the study period (January 2012 to December 2017), approximately 1100 patients were referred to the short-term treatment pathway oriented towards personality change. Of these patients, 225 (20.5%) were selected for the SCBT-g modality on the basis of the inclusion criteria listed above and after a shared decision-making process that could also involve practical considerations such as the availability of groups or the times at which the patient was available to attend therapy etc.

Intervention

The SCBT-g is a highly structured group therapy format based on the protocol by Broersen & van Vreeswijk (15). It consists of twenty weekly sessions of group therapy with 8 or 9 patients. Every session lasts two hours, including a short break. The programme comprised two phases: the conceptualisation phase and the schema-change phase. In the conceptualisation phase, the patients identified their three main schemas by discussing the results from the Young Schema Questionnaire, through psycho-education about the schema model and by discussing the origins of the patients' schemas. The schema-change phase consists of interventions focused on challenging and changing the maladaptive schemas and schema behaviour into more adaptive schema behaviour patterns with cognitive modification techniques, behaviour experiments and experiential interventions. Before the start of the group therapy, the patients were invited to attend two individual introduction sessions at which the SCBT-g was explained and a final eligibility check took place. Evaluation sessions were individual and took place at mid-treatment (week 10), treatment termination (week 20) and three months after the end of therapy (week 32).

During the study period, 26 therapists were assigned to pairs who worked with a total of 31 parallel groups.

Each group had one pair of therapists, with at least one therapist being a general mental health psychologist. Thirteen therapists were general mental health psychologists, one was a clinical psychologist, two were psychiatrists, two were psychotherapists, two were resident psychiatrists, one was a resident clinical psychologist and five were social psychiatric nurses.

All therapists completed a 56-hour course in schema therapy and at least 50 hours of group supervision for schema therapy chaired by a schema therapist registered as a supervisor with the Dutch Association of Schema Therapy. In addition, all therapists attended a weekly peer supervision session lasting one hour.

Measurements

Baseline assessments

Personality disorder

Before the intervention in question, patients were assessed in a standard intake procedure (i.e. clinical interview) conducted by government registered psychologists or psychiatrists. The intake procedure comprised a consistent interview schedule consisting of two parts, the first to make a general evaluation of the patient's psychopathology, the second to establish a biography for the patient. Insurance requirements meant that only patients with a confirmed DSM-IV(APA, 2000)(17) personality disorder diagnosis could be treated in the NPI Centre for Personality Disorders.

Comorbid depressive symptoms

The severity of comorbid depressive symptoms was measured with the Symptom Check List depression scale (SCL-90-R). On the basis of the Dutch norms for an outpatient psychiatric population (18) for the Symptom Checklist-90-R, a limit value of 48 points (means: above average score) was used, above which patients were considered to have depressive symptoms. As a consequence, we have labelled patients with a score below the cut-off score of 48 points 'the patient group with a personality disorder and without depressive symptoms' (the PD group) and patients with a score of 48 points or above 'the patient group with a personality disorder and with depressive symptoms' (the PD-DEP group).

Measurement instruments

All measurement instruments for outcome were completed by patients at baseline, after 10 weeks, at treatment termination (20 weeks) and at three-month follow-up (32 weeks). The data were collected and ordered by trained research assistants (master-level graduate students in clinical psychology).

The following measurement instruments were used:

The Symptom Checklist 90-Revised (SCL-90-R)(19) Dutch translation(18), a self-report instrument consist of 90 items covering different symptom scales rated from '1, not at all' to '5, could not be worse'. The scales are: *anxiety*, *phobic anxiety*, *depression*, *somatisation*, *insufficiency*, *interpersonal sensitivity*, *hostility*, *sleep problems*, and a *Global Severity Index* (GSI) scale. This last scale is the mean for all items. The instrument is well validated and internal consistency is high (Cronbach α=.82-.97). Test-retest reliability is good (20). The internal consistency in this study is high (SCL-90 Cronbach α = 0.98; subscales SCL-90 = 0.80-0.94).

The Young Schema Questionnaire (YSQ) (21) Dutch version(22) is a 205-item self-report questionnaire that is scored on a six-point Likert scale. It is used to measure 16 maladaptive schemas (core beliefs) as defined by Young *et al*, (23). These sixteen schemas are grouped in five schema domains. *Schema domain 1= disconnection and rejection* (schemas:, abandonment/instability, mistrust/abuse, emotional deprivation, social isolation and social undesirability), *Schema domain 2 = impaired autonomy* (dependency/incompetence, undeveloped self/enmeshment, defectiveness/shame, and failure to achieve), *schema domain 3 = impaired limits* (entitlement and insufficient self-control/discipline), *schema domain 4 = other directedness* (subjugation and self-sacrifice), *schema domain 5 = over-vigilance and inhibition* (emotional inhibition, unrelenting standards and vulnerability to harm/illness). Research has shown that, in the Dutch version of the YSQ, internal consistency is adequate to high in all schema scales (Cronbach α = 0.73-0.93) (24) and that reliability is good (squared multiple correlation, R^2 = 0.75)(24). The internal consistency of the YSQ in this study is large (Cronbach α = 0.97).

The 'Utrechtse' Coping List (UCL)(25) is a self-report questionnaire that aims to measure cognitive and behavioural coping patterns to determine which characteristic coping style is used when confronting problems or complex situations. The UCL covers 47 items. The following seven scales were extracted by factor analysis from 44 scaled items: *active coping* (7 items), *palliative reaction pattern* (8 items), *avoidance* (8 items), *seeking social support* (6 items), *passive reaction pattern* (7 items), *expression of emotions* (3 items) and r*eassuring thought* (5 items). Each of the items is rated on a four-point scale from 'Doesn't apply not to me'; 'Applies seldom to me', 'Applies often to me' to 'Applies to me'. The UCL has good psychometric properties. Internal consistency for the seven scales (Cronbach α = 0.43-0.88)(24) and reliability (r = 0.45-0.85) (25) are moderate to reasonable good. The internal consistency in this study is moderate (subscale UCL Cronbach α = 0.66-0.75).

We measured outcomes in three areas: general symptom severity (General Severity Index scale (GSI) of the SCL-90-R); severity of maladaptive schemas (Young Schema Questionnaire) and coping styles ('Utrecht' Coping List for measuring coping mechanisms). Secondly, we determined treatment success with the two-step approach of Jacobson&Truax (26) based on pre- to post- and follow-up treatment changes on the SCL-90 Global Severity Index (GSI).

Statistical analysis

Chi-square tests (categorical variables) and ANOVA (continuous variables) were used to compare the baseline characteristics of patients with and without comorbid depressive symptoms.

Within-group effect sizes (Cohen's d)(27) were calculated at week 20 and at three-month follow-up (32 weeks).

Linear mixed-model analyses were used to analyse the repeated continuous outcomes. First, we evaluated the treatment effect for the total patient group, the PD group and the PD-DEP group.

Subsequently, we examined the difference between the PD group and the PD-DEP group. These analyses were conducted using a two-level structure (patient, and repeated measurement occasion). As we used mixed-model analyses to evaluate outcome measures, no imputation of missing data was needed (28). Time was treated as a categorical variable to assess the treatment effects at the end of treatment and at follow-up for the PD group by contrast with the PD-DEP group. In all analyses, we added the baseline score of the dependent outcome variable (SCL-90-GSI) and the demographic and clinical variables from the baseline analysis with a p-value below .10 ($p < .10$; see table 1) to check for possible confounding because of the large difference between the scores for the two patient groups. These additional covariates were: cultural background (Dutch, north-western countries or non-western countries), job status, prior treatment for current treatment and medication use (see table 1). We have also added gender and age as covariates because depression is more common among females and prevalence varies by age (29). Demographics are stated as numbers and rates. With regard to cultural background, we assigned patients from the Netherlands to the category Dutch, patients from Northwest Europe, the United States, Australia and Canada to the category north-western countries and patients from other countries to the category non-western countries. With regard to job status, we allocated patients with employment problems due to sickness to the category Sickness benefits/Social security benefits.

Remission rates for the SCL-GSI at end of treatment and follow-up, were calculated on the basis of the two-step approach of Jacobson and Truax (26). We broke down treatment success into two categories: Reliable Change Index and Remission. The Reliable Change Index describes significant improvement between two measurement occasions. Remission is a combination of a Reliable Change Index and a Clinically Significant Change (CSC). A CSC describes those patients who exceed a cut-off score based on Lambert, Hansen and Bauer (30). Scores below these cut-off scores were classified as non-clinically significant. In the two-step approach of Jacobson and Truax (26), the Reliable Change Index is calculated first. The second step consists of determining whether patients who achieved reliable change also exceeded the cut-off score (Clinical Significant Change). The cut-off scores used in this study were a SCL-GSI score of 147.66 for the population as a whole, 141.90 for men and 153.73 for women. Patients who achieved reliable change and had a SCL-GSI score below the cut-off score were considered to have achieved Remission.

Results

Flowchart

Figure 1 shows the flow for participants. All 225 patients met the inclusion criteria of the SCBT-g and were invited for the baseline assessment. Of the total sample, 94 patients (41.8%) had a personality disorder and comorbid depressive symptoms (PD-DEP) and 131 (58.2%) had a personality disorder without comorbid depressive symptoms (PD). Five patients (3.8%) in the PD group and two (2.1%) in the PD-DEP group refused the treatment intervention.

A total of 52 patients dropped out during treatment. There were no baseline differences between the patients who dropped out and the patients who completed the treatment.

Thirty (23.8%) patients in the PD sample and 22 in the PD-DEP sample (23.9%) dropped out. This difference was not significant ($\chi 2(1) = 0.000$, $p = 0.99$).

Thirty-seven (71%) of the patients dropped out during the first ten treatment sessions and 15 (29%) during the last ten sessions. There was no difference in time of drop-out between the two patient groups ($\chi 2(1) = 0.583$, $p = 0.45$). The main reason for drop-out was a loss of motivation (62%).

Baseline characteristics

Table 1 shows the baseline sociodemographic and clinical characteristics. The majority of our sample had one personality disorder (DSM IV; APA)(17). The most common diagnosis was unspecified personality disorder. The most common specified personality disorders in the research sample were borderline personality disorder and avoidant personality disorder. There were no differences between the two patient groups in terms of number and category of personality disorders.

Table 1 Baseline characteristics for the total sample: personality disorder patients without and with comorbid depressive symptoms

Variable		Total sample	PD	PD-DEP	Test statistic (df)	p
Demographics						
Age n(mean)		225 (39.4)	131 (39.6)	94 (39.0)	F(1)= 0.229	.63
Gender n(%)	male	82 (36)	51 (39)	31 (33)	χ2(1)=.837	.36
Cultural background n(%)	Dutch	156 (69)	96 (73)	60 (64)	χ2(2)=5.279	.07
	North-Western countries	19 (8)	15 (12)	8 (9)		
	Non-Western	46 (20)	20 (15)	26 (28)		
Marital Status n(%)	single	157 (70)	91 (70)	66 (70)	χ2(2)=.259	.88
	married/living together	46 (20)	28 (21)	18 (19)		
	divorced	22 (10)	12 (9)	10 (11)		
Living situation n(%)	Living alone	152 (68)	88 (67)	64 (68)	χ2(4)=2.231	.69
	Living alone with children	21 (9)	12 (9)	9 (10)		
	Living with parent/guardian	7 (3)	4 (3)	3 (3)		
	Living together	32 (14)	17 (13)	15 (16)		
	Living together with children	13 (6)	10 (8)	3 (3)		
Job status n(%)	Job	100 (44)	67 (51)	33 (35)	χ2(4)=8.441	.08
	Student	25 (11)	12 (9)	13 (14)		
	Sickness benefits/Social security benefits	44 (20)	24 (18)	20 (21)		
	unemployed	48 (21)	22 (17)	26 (28)		
	Other	7 (4)	6 (5)	2 (2)		
Educational level n(%)	Low	106 (48)	64 (51)	42 (45)	χ2(2)=0.718	.70
	Intermediate	72 (33)	40 (32)	32 (34)		
	High	41 (19)	22 (18)	19 (20)		
Clinical characteristics						
Number personality disorders						
	one personality disorder	140 (62)	89 (68)	51 (54)	χ2(3)=7.052	.13
	two personality disorders	33 (15)	18 (14)	15 (16)		
	three personality disorders	51 (23)	24 (18)	27 (29)		
	four personality disorders	12 (5)	4 (3)	8 (9)		
Specific personality disorder						
	borderline personality disorder	49 (22)	28 (21)	21 (22)	χ2(3)=5.462	.70
	avoidant personality disorders	33 (15)	22 (17)	11 (12)		
	personality disorder not other specified	126 (56)	71 (54)	55 (58)		
	other personality disorder	17 (7)	10 (8)	7 (8)		
Medication n(%)		109 (48)	55 (42)	54 (57)	χ2(1)=5.239	.02*
Type of medication n(%)						
	antidepressants	75 (53)	37 (56)	38 (51)	χ2(3)= .561	.91
	antipsychotics	22 (16)	9 (14)	13 (17)		
	benzodiazepines	27 (19)	12 (18)	15 (20)		
	other mental	17 (12)	8 (12)	9 (12)		
Medication somatics n(%)		6 (5)				
Prior treatment for current treatment n(%)		202 (91)	113 (87)	89 (96)	χ2(1)=4.895	.03*
Drop-out history n(%)		59 (28)	30 (24))	29 (33)	χ2(1)=2.170	.14

Notes. PD = Personality Disorder; PD-DEP = Personality Disorder with comorbid Depressive symptoms; North-Western countries (North-Western Europe, North-America, Australia) * p<.05.

There were no differences between the sociodemographic characteristics of patients with and without depressive symptoms. Patients with depressive symptoms used more medication and had previously received mental health treatment more frequently than the PD patient sample without depressive symptoms.

Table 2 shows the scores for symptom severity, severity of maladaptive schemas and coping styles of the total sample, the PD patient group and the PD-DEP patient group.

Table 2 Baseline scores for the total sample: personality disorder patients without and with comorbid depressive symptoms

	Total sample (n = 225)	PD (n = 131)	PD-DEP (n = 94)	ANOVA	
Symptom severity	*M (SD)*	*M (SD)*	*M (SD)*	*F*	*p*
SCL *General Symptom Inventory*	210.72 (58.04)	176.60 (36.56)	258.26 (48.20)	F(1) = 208.727	0.000**
SCL *anxiety*	22.83 (7.86)	18.95 (5.55)	28.30 (7.86)	F(1) = 117.161	0.000**
SCL *phobic anxiety*	12.76 (5.61)	10.50 (3.56)	15.90 (6.40)	F(1) = 65.252	0.000**
SCL *depression*	44.27 (13.15	35.17 (7.88)	56.95 (7.12)	F(1) = 452.712	0.000**
SCL *somatisation*	25.13 (9.44)	21.19 (6.94)	30.63 (9.75)	F(1) = 71.938	0.000**
SCL *insufficiency*	23.57 (7.13)	20.47 (5.81)	28.89 (6.55)	F(1) = 80.380	0.000**
SCL *interpersonal sensitivity*	43.20 (13.61)	36.34 (9.31)	52.76 (12.89)	F(1) = 122.958	0.000**
SCL *hostility*	11.74 (4.88)	10.27 (3.70)	13.80 (5.57)	F(1) = 32.670	0.000**
SCL *sleep problems*	8.00 (3.41)	7.16 (3.10)	9.18 (3.49)	F(1) = 20.922	0.000**
SCL *other problems*	19.22 (5.76	16.71 (4.58)	22.71 (5.43)	F(1) = 80.395	0.000**
Schema severity					
YSQ *schema severity*	2.95 (0.70)	2.64 (0.60)	3.39 (0.60)	F(1) = 86.168	0.000**
YSQ domain *disconnection-rejection*	3.10 (0.85)	2.74 (0.73)	3.60 (0.74)	F(1) = 75.502	0.000**
YSQ domain *impaired autonomy*	2.66 (0.80	2.34 (0.69)	3.12 (0.73)	F(1) = 66.263	0.000**
YSQ domain *impaired limits*	2.92 (0.77)	2.72 (0.67)	3.22 (0.80)	F(1) = 26.230	0.000**
YSQ domain *other directedness*	3.27 (0.82)	3.01 (0.77)	3.63 (0.76)	F(1) = 34.978	0.000**
YSQ domain *overvigilance and inhibition*	2.89 (0.75)	2.57 (0.64)	3.33 (0.66)	F(1) = 75.773	0.000**
Coping styles					
UCL *active coping*	16.08 (4.36)	16.77 (4.16)	15.11 (4.47)	F(1)=7.863	0.006**
UCL *palliative reaction pattern*	18.72 (4.31)	18.50 (4.02)	19.04 (4.69)	F(1)=.843	0.359
UCL *avoidance*	18.39 (3.81)	17.65 (3.45)	19.46 (4.07)	F(1)=12.494	0.000**
UCL *seeking social support*	12.69 (4.17)	13.17 (3.88)	12.01 (4.49)	F(1)=4.153	0.043*
UCL *passive reaction pattern*	17.70 (3.78)	16.09 (3.16)	19.99 (3.41)	F(1)=75.300	0.000**
UCL *expression of emotions*	6.89 (2.36)	6.78 (2.02)	7.03 (2.77)	F(1)=.603	0.438
UCL *reassuring thoughts*	11.32 (2.83)	11.91 (2.52)	10.46 (3.04)	F(1)=14.911	0.000**

Notes. PD = Personality Disorder; PD-DEP = Personality Disorder with comorbid Depressive symptoms; SCL = Symptom Checklist; YSQ = Young Schema Questionnaire; UCL = Utrecht Coping List; *M* = Mean; *SD* = Standard Deviation; *Pre-Post d* = Baseline to treatment termination Effect Size; *Pre-Fu d* = Baseline to Follow -up Effect Size. *p < .05; **p < .01.

Other than the depressive symptoms, the PD-DEP had higher baseline scores for all other SCL-90 scales and maladaptive schemas. The baseline coping style scores showed that patients with comorbid depressive symptoms made more use of *avoidance* and *passive reaction patterns* and less of *active coping*, *seeking social support* and *reassuring thoughts*.

Effectiveness and impact of comorbidity on symptom distress, schema severity and coping styles

Table 3 shows the mean and SD scores of the treatment for the total patient group, the PD-group and PD-DEP group at mid-treatment (10 weeks), at end of treatment (20 weeks) and three-month follow-up (32 weeks).

Table 3 Change of symptoms, maladaptive schemas and coping styles mid-treatment (week 10), treatment termination (week 20) and three-month follow-up after treatment (week 32)									
	Total sample			PD			PD-DEP		
	week 10	week 20	week 32	week 10	week 20	week 32	week 10	week 20	week 32
	(n = 178)	(n = 152)	(n = 122)	(n = 103)	(n = 89)	(n = 72)	(n = 75)	(n = 64)	(n = 54)
Outcome measure	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
SCL *anxiety*	21.65 (8.34)	19.74 (8.29)	19.88 (7.80)	19.31 (7.63)	17.17 (6.78)	17.90 (6.93)	24.76 (8.27)	23.42 (8.91)	22.72 (8.16)
SCL *phobic anxiety*	12.12 (5.72)	11.15 (5.06)	11.38 (5.53)	10.78 (4.19)	10.03 (4.29)	10.04 (3.94)	13.90 (6.91)	12.76 (5.66)	13.30 (6.83)
SCL *depression*	41.03 (13.06)	35.82 (13.65)	37.53 (13.63)	36.32 (11.09)	31.09 (10.97)	33.94 (10.94)	47.31 (12.91)	42.61 (14.31)	42.70 (13.02)
SCL *somatisation*	23.40 (8.42	21.74 (8.43)	22.27 (8.29)	21.30 (7.67)	19.53 (6.60)	20.18 (7.29)	26.19 (8.61)	24.90 (9.72)	25.28 (8.77)
SCL *insufficiency*	21.64 (7.32)	20.66 (7.68)	20.49 (7.57)	20.07 (6.59)	18.16 (6.42)	18.88 (7.05)	23.72 (7.76)	24.29 (7.95)	22.82 (7.76)
SCL *sensitivity*	40.29 (12.73)	35.93 (12.57)	36.26 (13.79)	37.25 (11.00)	31.55 (10.20)	32.71 (11.20)	44.35 (13.80)	42.23 (13.05)	41.38 (15.57)
SCL *hostility*	10.71 (4.32)	9.89 (4.26)	9.57 (3.63)	9.95 (3.42)	8.81 (3.14)	8.67 (2.71)	11.72 (5.14)	11.45 (5.12)	10.88 (4.35)
SCL *sleep problems*	7.51 (3.40)	6.78 (3.29)	7.30 (3.54)	6.97 (3.25)	6.29 (3.22)	6.99 (3.36)	8.24 (3.48)	7.49 (3.29)	7.76 (3.77)
SCL *other*	18.02 (5.54)	16.31 (5.77)	15.98 (5.23)	16.68 (5.03)	14.61 (4.77)	15.00 (4.78)	19.82 (5.70)	18.76 (6.22)	17.38 (5.56)
SCL *General Symptom Inventory*	196.55 (55.85)	178.84 (58.99)	180.47 (57.50)	178.84 (47.44)	157.11 (43.23)	163.59 (49.50)	220.15 (57.77)	209.54 (61.70)	204.44 (59.98)
YSQ *schema severity*	2.79 (0.72)	2.49 (0.75)	2.53 (0.86)	2.55 (0.64)	2.24 (0.68)	2.27 (0.75)	3.13 (0.69)	2.84 (0.70)	2.86 (0.87)
YSQ domain *disconnection-rejection*	2.95 (0.86)	2.61 (0.88)	2.69 (1.01)	2.66 (0.77)	2.31 (0.76)	2.29 (0.89)	3.34 (0.82)	3.03 (0.85)	3.07 (1.01)
YSQ domain *impaired autonomy*	2.52 (0.78)	2.22 (0.77)	2.26 (0.88)	2.28 (0.69)	1.99 (0.71)	1.99 (0.77)	2.85 (0.77)	2.53 (0.74)	2.58 (0.92)
YSQ domain *impaired limits*	2.75 (0.80)	2.50 (0.80)	2.47 (0.84)	2.57 (0.73)	2.27 (0.71)	2.25 (0.73)	3.00 (0.83)	2.81 (0.81)	2.74 (0.90)
YSQ domain *other directedness*	3.10 (0.80)	2.78 (0.85)	2.80 (0.94)	2.94 (0.78)	2.57 (0.84)	2.60 (0.90)	3.32 (0.79)	3.07 (0.77)	3.04 (0.95)
YSQ domain *overvigilance and inhibition*	2.71 (0.80)	2.45 (0.80	2.44 (0.87)	2.46 (0.69)	2.19 (0.71)	2.20 (0.72)	3.04 (0.82)	2.79 (0.80)	2.74 (0.95)
UCL *active coping*	16.48 (4.38)	17.11 (4.04)	17.65 (3.91)	17.09 (4.29)	17.36 (3.83)	17.61 (3.75)	15.66 (4.39)	16.74 (4.33)	17.69 (4.15)
UCL *avoidance*	18.17 (3.97)	17.55 (3.37)	18.04 (3.76)	18.03 (4.25)	17.11 (3.30)	17.60 (3.65)	18.35 (3.59)	18.16 (3.41)	18.65 (3.88)
UCL *passive reaction pattern*	16.80 (4.05)	15.51 (4.23)	15.87 (4.31)	15.73 (3.80)	14.31 (3.74)	14.77 (4.04)	18.23 (3.96)	17.21 (4.33)	17.37 (4.26)
UCL *reassuring thoughts*	11.61 (3.09)	11.85 (3.29)	12.12 (3.20)	12.10 (2.77)	12.09 (3.28)	12.06 (2.85)	10.96 (3.38)	11.5 (3.29)	12.20 (3.65)

Notes. PD = Personality Disorder; PD-DEP = Personality Disorder with comorbid Depressive symptoms; SCL = Symptom Checklist; YSQ = Young Schema Questionnaire; UCL = Utrechtse Coping List; *M* = Mean; *SD* = Standard Deviation; *Pre-Post ES* = Baseline to treatment termination Effect Size; *Pre-Fu ES* = Baseline to Follow-up Effect Size.

First, we tested treatment effects for the total patient group, for the PD group and the PD-DEP group. In the total sample (n = 225), the pre-post effect sizes were 0.50 for symptom distress (SCL-GSI) and small to medium (ES = 0.25-0.50) for all other SCL scales. The improvements on all SCL scales were significant. The pre-post effect sizes were small (ES = 0.15-0.49) and small to large (ES =0.29-1.25) for the PD and the PD-DEP groups respectively.

The improvements in schema severity (YSQ total) and for all other schema domains were significant with medium effect sizes (ES = 0.56 and ES = 0.43-0.55, respectively). The improvements were significant with medium effect sizes ES =0.44-0.56 and 0.40-0.72 for the PD and the PD-DEP groups respectively.

The effect sizes were small (ES = 0.20-0.47) but significant for the UCL coping styles. The pre-post effect sizes were 0.03-0.47 and 0.21-0.58 for the PD and PD-DEP groups respectively. The effects for the UCL scales avoidance and reassuring thoughts were not significant in the PD group.

At follow-up, there were significant effect sizes in the total sample for SCL-GSI (ES = 0.45) and for the other SCL scales (ES = 0.05-0.52), with a non-significant effect for the SCL scale 'sleep problems' only.

The effect sizes were small (ES = 0.08-0.43) and small to large (ES = 0.18-1.00) for the PD and PD-DEP patient groups respectively. The effects were not significant in the PD group for the following scales only: SCL anxiety, phobic anxiety, depression, somatisation and sleep problems.

The effect sizes for the YSQ total (ES= 0.49) and for the other schema domains (ES = 0.40-0.52) were significant for the sample as a whole. The effect sizes were 0.39-0.54 and 0.36-0.58 and significant for the PD and PD-DEP groups respectively.

With regard to the UCL coping styles, the effect sizes were significant (ES = 0.08-0.41), with the exception of the UCL scale avoidance. The effect sizes were small (ES = 0.07-0.37 and ES = 0.01-0.57) for the PD and PD-DEP groups respectively. The effects for the UCL scale avoidance were not significant in the PD and PD-DEP groups. A non-significant effect was seen for the UCL scale reassuring thoughts in the PD group.

In conclusion, there were improvements in both patient groups at treatment termination and at follow-up in terms of psychiatric symptom severity, maladaptive schema severity and, to a lesser extent, coping styles. This was not the case for avoidance: the improvement in both patient groups was non-significant here and effect sizes were small.

Table 4 shows between-group differences for primary and secondary outcome at treatment termination (week 20) and three-month follow-up (32 weeks).

Table 4 Multi-level analyses of outcome for personality disorders without and with comorbid depressive symptoms at treatment termination (week 20) and three month-follow up (week 32)				
	week 20		week 32	
Outcome measure	***EMD (SE)***	***p***	***EMD (SE)***	***p***
SCL *anxiety*	-0.61 (0,93)	.51	-1.78 (1.02)	.08
SCL *phobic anxiety*	-1.24 (0.54)	.02	-1.21 (0.59)	.04
SCL *depression*	-5.12 (1.98)	.01	-7.44 (2.09)	.00*
SCL *somatisation*	-0.86 (0.93)	.36	-1.02 (1.03)	.32
SCL *insufficiency*	0.44 (0.84)	.60	-0.66 (0.91)	.47
SCL *sensitivity*	-1.10 (1.45)	.45	-3.53 (1.57)	.03
SCL *hostility*	0.61 (0.48)	.21	0.03 (0.53)	.96
SCL *sleep problems*	0.16 (0.39)	.69	-0.38 (0.43)	.44
SCL *other*	-0.67 (0.64)	.29	-2.76 (0.69)	.00*
SCL *General Symptom Inventory*	-12.08 (6.64)	.07	-23.61 (7.17)	.00*
YSQ *schema severity*	0.02 (0.08)	.81	0.03 (0.09)	.72
YSQ domain *disconnection-rejection*	0.05 (0.08)	.54	0.003 (0.10)	.98
YSQ domain *impaired autonomy*	-0.48 (0.08)	.56	-0.0002 (0.09)	.99
YSQ domain *impaired limits*	0.10 (0.07)	.19	0.12 (0.08)	.14
YSQ domain *other directedness*	0.12 (0.10)	.19	0.10 (0.10)	.34
YSQ domain *overvigilance and inhibition*	-0.01 (0.08)	.95	-0.04 (0.09)	.66
UCL *active coping*	0.49 (0.42)	.25	0.74 (0.47)	.11
UCL *avoidance*	0.26 (0.47)	.59	0.57 (0.52)	.27
UCL *passive reaction pattern*	0.33 (0.53)	.54	0.24 (0.58)	.68
UCL *reassuring thoughts*	0.91 (0.37)	.01	1.25 (0.40)	.00*

Notes. PD = Personality Disorder; PD-DEP = Personality Disorder with comorbid Depressive symptoms; SCL = Symptom Checklist; YSQ = Young Schema Questionnaire; UCL = Utrecht Coping List; *EMD* = Estimated Mean Difference; *SE* = Standard Error. *p <.01.

As can be seen in Table 4, a multilevel analysis identified no differences between patients with and without depression at treatment termination. However, at follow-up, a more favourable effect was reported for general symptoms (SCL-GSI) in the PD-DEP patient group. This was also the case for depression symptoms (SCL depression), other unspecified symptoms (SCL *other problems*) and *reassuring thoughts* (UCL *reassuring thoughts*).

Remission at treatment termination and three-month follow-up

At post-treatment, fifty percent (76/152), of the total sample who completed therapy achieved reliable change as calculated using the Jacobsen and Truax method. Symptom remission based on the SCL-90 was achieved in 26.3% (40/152) of the patients. No statistical difference was found for reliable change between PD and PD-DEP patients: 44.9% (40/89) in PD patients and 57.1% (36/63) in PD-DEP patients. However, the remission rate was 32.6% (29/89) for the PD group and 17.5% (11/63) for the PD-DEP group, which is a significant difference ($\chi 2(1) = 4.351$, $p = 0.04$).

At follow-up, Reliable Change was observed in 44.6% (54/121) of all patients: 32.4% (23/71) in the PD group and 62.0% (31/50) in the PD-DEP group. The difference was significant ($\chi 2(1) = 10.406$; $p = 0.001$).

Remission was achieved in 22.3% (27/121) of the patients: 21.1% (15/71) for the PD group and 24.0% (12/50) for the PD-DEP group. This was not a significant difference ($\chi 2(1) = 0.140$ $p = 0.71$).

Discussion

The aim of this study was to see whether the presence of depression symptoms reduces responsiveness to SCBT-g in a broad sample of personality-disordered patients.

We found that this therapy was moderately effective in terms of bringing about improvements in psychiatric symptoms and maladaptive schemas. It proved to be more difficult to achieve improvements in coping styles, particularly in the avoidance style. There were hardly any differences in effect sizes between patients with or without comorbid depressive symptoms.

However, symptom remission was achieved in a minority of all patients, which may indicate this type of short-term group therapy could be seen as a valuable first step in a stepped-care model.

Differences in baseline characteristics between patients with or without comorbid depressive symptoms

Personality -disordered patients with severe depressive symptoms had more psychiatric problems, maladaptive schema's and coping, and more of them had received treatment previously. Nevertheless, among a vast majority of the non-depressed patient had a treatment history as well. Taken in conjunction, these data indicate that, in general, the patients in this study were rather difficult to treat, particularly those in the depressed patient sample.

This baseline severity in depressed patients was also reported by Renner et al. (14), who stated that these patients were more disturbed at the level of symptoms and personality pathology.

There was no difference in drop-out in time and number. This is in line with the finding that there is still no homogeneous predictor for drop out (31).

Comparing treatment outcomes after short-term schema group therapy for personality disorders

Comparable studies (11. 7, 8, 32) mostly report a slightly higher effect on psychiatric symptom severity, with small (28) to high (7) effect sizes, than in our study.

This observation can be interpreted by reference to methodological differences. The naturalistic study of Jensen *et al*, (8), for example, applied a higher dose of the examined therapy (39 sessions) than our study (20 sessions).

Vreeswijk *et al*, (11) used a higher SCL-GSI cut-off score for remission on the basis of norm group data provided in the Dutch manual for SCL-90 from Arrindell & Ettema (20).

In addition, there are indications that symptoms in the samples of these studies were less severe than in our study. The patients in the study by Vreeswijk *et al*, (11) had a lower baseline symptom severity score

(SCL-GSI = 188.87) and the study by Renner *et al,* (7) included patients with less severe symptoms (personality disorder or meeting subthreshold criteria for DSM-IV personality disorder) and the majority of the patients in the research sample of the Lorentzen study (32) did not have a personality disorder.

In general, improvements in coping styles seem to be more difficult to achieve, in particular for the coping style *avoidance*.

There are therefore strong indications that it is more difficult to address this area effectively with this short-term group approach. It is known that avoidant coping styles like self-distraction and disengagement aggravate personality disorders (33). We therefore believe that treatment should focus more on avoidance in future approaches by including specific experiential or behavioural interventions such as role-playing or exposure to *in vivo* interventions.

The impact of comorbid depressive symptoms on treatment outcome

Although the PD-DEP patient group had more severe baseline psychopathology, both patient groups achieved similar levels of reliable change. While remission was seen in significantly more PD patients at treatment termination, this difference in remission was no longer present at follow-up because more patients with comorbid depression improved during the follow-up period. This suggests that patients in the PD-DEP group, possibly as a result of a significant higher baseline psychopathology, need more time to recover than their counterparts in the PD group. This is in line with the study of Renner et al. (14), who came to the conclusion that it is not the comorbid depression, but the high baseline psychiatric symptomatology in the comorbidity group that has a negative effect on treatment outcome.

“In summary, despite the low symptom remission rates, schema therapy is a favourable treatment option for a broad group of patients, as suggested by other studies (14, 34). The presence of depressive symptoms should not preclude referral to a group schema therapy programme with an exclusive focus on personality disorders. It is therefore reasonable to conclude that short-term therapy can be a beneficial first step, albeit one that will not ultimately be adequate for many patients.

Limitations and strengths

Firstly, there was no control group in this study. We cannot therefore state the extent to which improvement after treatment was attributable to the schema group therapy or to natural symptom variations over time. However, it is important to bear in mind that the evaluated intervention was carried out in a complex patient population with long-standing problems who had almost all received apparently unsuccessful treatment in the past. We would therefore expect natural variation to result in only limited improvement in these patients. This was also suggested by a study of patients with a range of psychiatric disorders in Germany and Denmark: effect sizes ranging from 0.12 to 0.19 were reported when the patients were on a waiting list (35, 36).

The second shortcoming in our study is that the presence of a personality disorder is determined by a regular clinical intake procedure and not by structured diagnostic interviews such as the SCID-PD. On the

other hand, all patients were referred specifically to our specialised service for the treatment of PD.

The severity of comorbid depressive symptoms was determined solely with a self-report questionnaire, which implies a slight risk of over-reporting (12). In addition, the depressive symptom endorsement in self-report questionnaires from the PD population might reflect acute dysphoric distress rather than true depression.

Thirdly, we could not control for possible additional treatment during the follow-up period and so we cannot state to what extent this affected outcome at follow-up.

The first strength of this study was the strong ecological validity because of the naturalistic clinical setting. Secondly, we had a large sample, resulting in high power and a smaller confidence interval and therefore in strong result validity and reliability. In addition, the large sample made it possible to perform the subgroup analysis.

Finally, treatment was delivered in groups which are cost-efficient and potentially applicable to multiple settings of clinical practice.

Conclusions

In conclusion, a short-term form of schema therapy in groups promised to be an effective approach for a broad group of patients with personality disorders, including those with severe comorbid depressive symptoms, since it can lead to improvements not only in symptoms but also in underlying schemas.

Nevertheless, we should stress that the majority of patients did not achieve symptom remission. In particular, more severe patients with comorbid depressive symptoms may need higher doses or more intense treatment. We therefore believe that, for these complex patients, a short-term group approach is, above all, a helpful and pragmatic first step in a stepped-care model. In patients who have not achieved remission, more intensive or long-term forms of psychotherapy should be considered.

Abbreviations

CSC: Clinical Significant Change; DSM-IV: Diagnostic and Statiscal Manual of Mental Disorders-IV; ES: Effect Size; PD: Personality Disorder; PD-DEP: Personality Disorder with comorbid depressive symptoms; SCBT-g: Schema Cognitive Behavioural Therapy in groups; SCL-90-R: Symptom Check List-90-Revised; SCL-90-GSI: Symptom Checklist-90-General Severity Index; UCL: ‘Utrechtse’ Coping List; YSQ: Young Schema Questionnaire.

Declarations

Ethics approval and consent to participate

The study protocol and informed consent procedure were approved by the Medical Ethics Review Committee of VU University Medical Center registered with the US Office for Human Research Protections (OHRP) as IRB00002991 and the reference number METc VUmc2015.409. They confirm that the Medical Research Involving Human Subjects Act (WMO) does not apply to the above mentioned study and that an official approval of this study by our committee is not required. The written informed consent was obtained from each participant prior to study initiation.

Consent for publication

Not applicable

Availability of data and materials

The dataset and materials generated and analysed during the current study are not publicly available due to ethical restrictions and personal data protection. However, they are available upon the reasonable request to the corresponding author.

Competing interests

All authors declare that they have no competing interests

Funding

Not applicable

Authors' contributions

DK drafted the manuscript. JP provided statisitical consultation and carried out data analysis.

HV and JA revised the manuscript. JD supervised the study and edited the manuscript. All authors read and approved the final manuscript.

Acknowledgements

Not applicable

Toegevoegde referenties

American Psychiatric Association. Diagnostic and statistical manual of mental disorders text

revision. 4th edition.Washington, DC: American Psychiatric Association; 2000.

References

1. Leichsenring F, Rabung S. **Long-term psychodynamic psychotherapy in complex mental disorders: update of a meta-analysis.** Br. J. Psychiatry 2011;199(1):15-22.

2. Simon W: **Follow-up psychotherapy outcome of patients with dependent, avoidant and n obsessive-compulsive personality disorders: A meta-analytic review.** Int. J. Psychiat. Clinical 2009;13(2):153-65.

3. Verheul R, Herbrink M: **The efficacy of various modalities of psychotherapy for personality disorders: a systematic review of the evidence and clinical recommendations.** Int. Rev. Psychiatry 2007;19(1):25-38.

4. Leichsenring F, Leibing E: **The effectiveness of psychodynamic therapy and cognitive behavior therapy in the treatment of personality disorders: a meta-analysis.** Am. J. Psychiatry 2003;160(7):1223-32.

5. Fjeldstad A, Høglend P, Lorentzen S: **Presence of Personality Disorder Moderates the Long-Term Effects of Short-Term and Long-Term Psychodynamic Group Therapy: A 7-Year Follow-up of a Randomized Clinical Trial.** Group Dyn-Theor. Res 2016;20(4):294-309.

6. Bos EH, van Wel EB, Appelo MT, Verbraak MJ: **Effectiveness of Systems Training for Emotional Predictability and Problem Solving (STEPPS) for borderline personality problems in a 'real-world' sample: moderation by diagnosis or severity?** Psychother. Psychosom 2011;80(3):173-81.

7. Renner F, van Goor M, Huibers M, Arntz A, Butz B, Bernstein D: **Short-term group schema cognitive-behavioral therapy for young adults with personality disorders and personality disorder features: associations with changes in symptomatic distress, schemas, schema modes and coping styles.** Behav. Res. Ther 2013;51(8):487-92.

8. Jensen HH, Mortensen EL, Lotz M: **Effectiveness of short-term psychodynamic group therapy in a public outpatient psychotherapy unit.** Nordic journal of psychiatry 2010;64(2):106-14.

9. Burlingame GM, Strauss B, Joyce AS: **Change mechanisms and effectiveness of small group treatments.** In: Lambert MJ, editor: Bergin and Garfield's Handbook of Psychotherapy and Behavior Change. *New York:*Wiley & Sons; 2013. p. 640-89

10. Jacob G, Arntz A: **Schema Therapy for Personality Disorders—A Review.** Int. J. Cogn. Ther 2013;6:171-85.

11. van Vreeswijk MF, Spinhoven P, Eurelings-Bontekoe EH, Broersen J: **Changes in symptom severity, schemas and modes in heterogeneous psychiatric patient groups following short-term schema cognitive-behavioural group therapy: a naturalistic pre-treatment and post- treatment design in an outpatient clinic.** Clin. Psychol. Psychother 2012;21(1):29-38.

12. Friborg O, Martinsen EW, Martinussen M, Kaiser S, Overgard KT, Rosenvinge JH: **Comorbidity of personality disorders in mood disorders: a meta-analytic review of 122 studies from 1988 to 2010.** J. Aff. Disord 2014;152-154:1-11.

13. Hellerstein DJ, Skodol AE, Petkova E, Xie H, Markowitz JC, Yen S, et al: **The impact of comorbid dysthymic disorder on outcome in personality disorders.** Compre. Psychiatry 2010;51(5):449-57.

14. Renner F, Bamelis LL, Huibers MJ, Speckens A, Arntz A: **The impact of comorbid depression on recovery from personality disorders and improvements in psychosocial functioning: results from a randomized controlled trial.** Behav. Res. Ther 2014;63:55-62.

15. Broersen JV, van Vreeswijk MF. **Schemathrapy in Groups: A short-term Schema CBT protocol.** West Sussex: Wiley & Sons; 2012.

16. Thiese MS: **Observational and interventional study design types; an overview.** Biochem. Med: 2014;24(2):199-210.

17. American Psychiatric Association. **Diagnostic and Statistical manual of mental disorders text revision**. 4th edition. Washington.DC: American Psychiatric Association, 2000

18. Arrindell WA, Ettema JHM. **Symptom Checklist SCL-90.** Harcourt Test Publishers, 2005.

19. Derogatis LR. **SCL-90-R : symptom checklist-90-R : administration, scoring & procedures manual.** Piscataway:National Computer Systems, Inc.; 1994.

20. Arrindell WA, Ettema JHM. Symptom Checklist SCL-90. Amsterdam:Swets Test Services; 1986.

21. Young J.E. **Cognitive therapy for personality disorders: a schema-focused approach.** Sarasota US:Professional Resource Press; 1994.

22. Young JE, Pijnaker H. **Young Schema Questionnaire.** Houten:Bohn Stafleu van Loghum;1999.

23. Young JE, Klosko JS, Weishaar ME. **Schema therapy: A practitioner's guide**. New York:Guilford Press; 2003.

24. Rijkeboer M, Bergh H: **Multiple Group Confirmatory Factor Analysis of the Young Schema-Questionnaire in a Dutch Clinical versus Non-clinical Population.** Cognit. Ther. Res 2006;30:263-78.

25. Schreurs PJG, Tellegen B, Van De Villige G, Brosscot, JF. **De Utrechtse Coping Lijst: Handleiding.** Swets en Zeitlinger; 1988.

26. Jacobson NS, Truax P: **Clinical significance: a statistical approach to defining meaningful change in psychotherapy research.** J. Consult. Clin. Psychol 1991;59(1):12-9.

27. Cohen J. **Statistical Power Analysis for the Behavioral Sciences.** Abingdon US:Taylor and Francis; 2013.

28. Twiske J, De Boer M, De Vente W, Heymans M: **Multiple imputation of missing values was not necessary before performing a longitudinal mixed-model analysis.** J. Clin. Epidemiol 2013; 66:1022-28

29. World Health Organisation: **Depression and Other Common Mental Disorders Global Health Estimates.** Geneva: WHO Document Production Services; 2017

30. Lambert MJ, Hansen NB, Bauer S. **Assessing the clinical significance of outcome results.** In: Nezu AM, Nezu CM editors. Evidence-based outcome research: A practical guide to conducting randomized controlled trials for psychosocial interventions. Oxford:University Press; 2008. p. 359-78

31. Barnicot K, Katsakou Ch, Bhatti N, Savill M, Fearns N, Priebe S: **Factors predicting the outcome of psychotherapy for borderline personality disorder: A systematic review**. Clin. Psychol. Rev 2012;32:400-12

32. Lorentzen S, Ruud T, Fjeldstad A, Hoglend P: **Comparison of short- and long-term dynamic group psychotherapy: randomised clinical trial.** The Br. J. Psychiatry 2013;203(3):280-7.

33. Vollrath M, Alnaes R, Torgersen S. **Coping styles predict change in personality disorders.** Pers. Disord 1998;12(3):198-209.

34. Gunderson JG, Morey LC, Stout RL, Skodol AE, Shea MT, McGlashan TH, et al. **Major depressive disorder and borderline personality disorder revisited: longitudinal interactions**. Clin Psychiatry. 2004;65(8):1049-56.

35. Leichsenring F, Biskup J, Kreische R, Staats H. **The Gottingen study of psychoanalytic therapy: first results.** Int. J. Psychoanal 2005;86(Pt 2):433-55.

36. Hougaard E, Valbak K, Sommerlund B: **Methods of measuring Effects in Naturalistic Psychotherapy Research (in Danish).** Agrippa - psychiatric texts 1999;19:53-70.

Figures

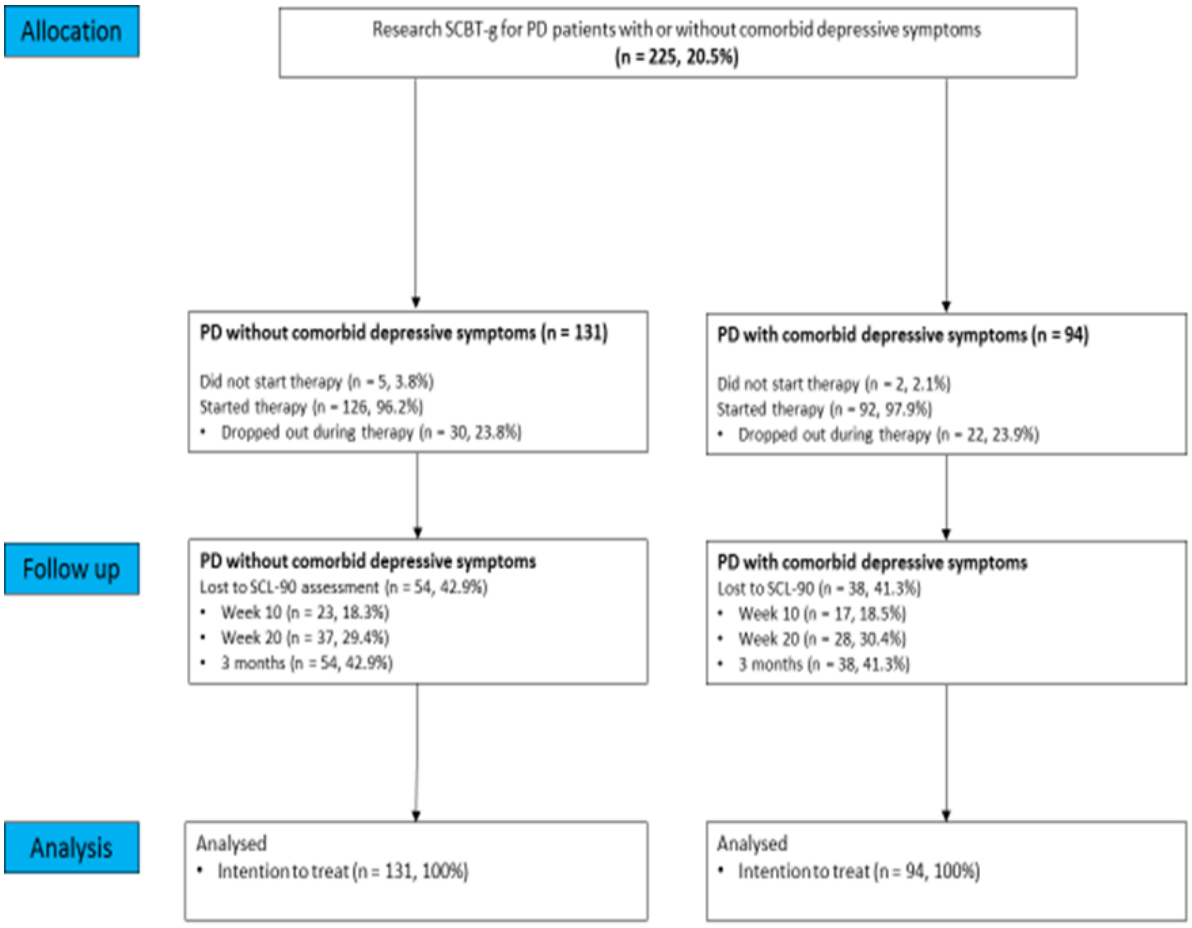

Figure 1

Flowchart

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Tables.docx