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

CURRENT STATUS: UNDER REVIEW

BMC Psychiatry  ■ BMC Series

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DOI:
10.21203/rs.2.11684/v1

SUBJECT AREAS
Psychiatry

KEYWORDS
Personality disorders, comorbidity, schematherapy, grouptherapy, effectiveness
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, this could be a cost-effective way to treat patients in groups (9) and help to cut the long waiting lists for many PD services.
A number of evidence-based treatment formats have been developed and evaluated that focus on borderline personality disorders (9). 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 (10). Nevertheless, we have found only two studies (11, 12) that examine the impact of depressive symptoms on the treatment of personality disorders. Hellerstein et al, (11) found that comorbid dysthymic disorders impaired remission from personality disorders in long-term individual treatment. Renner et al, (12) 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. The schema therapy approach has been extended to other personality disorders (13) 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, (14) 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. As far as we know, the effect of comorbid depression on the outcome of short-term group therapy for PD has never been examined. 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 treatment outcome. 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 in the sociodemographic and clinical characteristics of PD patients with and without severe depressive symptoms?

2. What is the overall effect of SCBT at the symptom, schema and coping style levels at treatment termination and at follow-up?

3. Could we identify relevant differences in the effects of therapy in personality disorder patients with and without comorbid depressive symptoms?
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. The strength of this design is the suggestion that the outcome is determined by the intervention, even though pre-post studies do not have control over other elements affecting treatment outcome (16). Patients were recruited from January 2012 through to December 2017 at the NPI, 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
The NPI treatment programme consists of three treatment pathways: a pathway focusing exclusively on symptoms and coping (< 1 year treatment), a short-term pathway oriented towards personality change (< 1 year treatment) and a pathway oriented towards structural personality change (> 1 year treatment).

After intake, patients are referred to one of these pathways. Subsequently, after the refinement of the diagnosis and a shared decision-making process, one of the modalities of the treatment pathway is selected.

In addition to the group therapy studied here (SCBT-g), the short-term pathway oriented towards personality change consisted of two individual modalities: Affect Phobia Therapy and Short-term Psychodynamic Supportive Psychotherapy (SPSP).

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, treatment termination and three months after the end of therapy.

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 included two interviews, 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 personality disorder diagnosis could be treated in the NPI.

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 (17) for the Symptom Checklist-90-R, a cut-off score of 48 points was used, above which patients were considered to have depressive symptoms.

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. 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)(18) Dutch translation(17), 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 (19).

The Young Schema Questionnaire (YSQ) (20) Dutch version(21) 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, (22). 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 $\alpha = 0.73$-0.93) (23) and that reliability is good (squared multiple correlation, $R^2 = 0.75$)(23).

The ‘Utrecht’ Coping List (UCL)(24) 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 reassuring 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 $\alpha = 0.43$-0.88)(24) and reliability ($r = 0.45$-0.88) (24) is good.

We measured outcomes at three levels: 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 (25) based on pre- to post- and follow-up treatment changes on the SCL-90 Global Severity Index (GSI). The Reliable Clinical Index (25) was calculated first, followed by the symptom remission rate.

**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)(26) were calculated at week 20 and at three-month follow-up. Paired sample t-tests were used to test treatment effects for these time points by comparison with baseline.
Linear mixed model analyses were used to analyse the repeated continuous outcomes. These analyses were conducted using a two-level structure (patient, and repeated measures). To control for possible confounding, we added the baseline score of the dependent outcome variable and the variables from the baseline analysis with a p < .10. These additional covariates were: gender, age, cultural background, job status and medication use.

Remission rates for the SCL-GSI were calculated on the basis of the two-step approach of Jacobson and Truax (25). Reliable change was calculated first, and patients were then categorised using cut-off scores based on Lambert, Hansen and Bauer(27). The cut-off scores used were 147.66 for the population as a whole, 141.90 for men and 153.73 for women. Patients with reliable change and 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-DE) 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. The main reason for drop-out was a loss of motivation (62%).

Figure 1 Flowchart Baseline characteristics One personality disorder was diagnosed in 62.2% of the 225 patients, two in 14.7%, three in 17.3% and four in 5.3%. Unspecified
personality disorders were found in 56% of the total sample. The most common specified personality disorders in the research sample were borderline personality disorder (21.8%) and avoidant personality disorder (14.7%). One patient had a schizotypical personality disorder. There were no differences between the two patient groups in terms of the frequency or category of personality disorders.

Table 1 shows the baseline sociodemographic and clinical characteristics. 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. 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.

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 outcome of the treatment as within-group effect sizes. In the total sample (n = 225), the effect size was 0.50 for symptom distress (SCL-GSI) at treatment termination and 0.45 at follow-up. The effect sizes for schema severity (YSQ total) were 0.56 and 0.49 respectively. Pre-post effect sizes (ES = 0.20-0.62) were significant for all other SCL symptom scales, YSQ schema domains and UCL coping styles. These improvements were also significant at follow-up (ES = 0.05-0.52), with the exception of the SCL scale sleep problems and the UCL scale avoidance. The pre-post
effect sizes were 0.03-0.56 and 0.21-1.25 for the PD and PD-DEP patient groups respectively. The effects for the SCL scale phobic anxiety and the UCL scales active coping and avoidance were not significant in the PD group. A significant effect was seen only for avoidance in the PD-DEP group. The effect sizes in the PD and the PD-DEP patient groups were 0.06 to 0.54 and 0.01 to 1.28 respectively at follow-up. The effects for the following scales were not significant in the PD group: SCL anxiety, phobic anxiety, depression, somatisation, sleep problems, other problems and general symptom severity (SCL-GSI). A significant effect size was seen in the PD-DEP group for SCL sleep problems and UCL avoidance only. In conclusion, although effect sizes were higher in the PD-DEP group than in the PD group, there were improvements in both 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.

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 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, clinically significant improvement 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 explore the effectiveness of SCBT-g in a broad sample of personality-disordered patients with and without severe comorbid depressive symptoms. 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 also had more severe general psychiatric symptoms, schemas were more dysfunctional and they made use of more inadequate coping styles. Almost all of them had received treatment previously. It is also noteworthy that 87% of the non-depressive patients had received treatment in the past. In these earlier treatments the drop-out rate among depressed patients was higher, but not significantly so.

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. (12), who
also stated that these patients were more disturbed at the level of symptoms and personality pathology.

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

Comparable studies (14, 7, 8, 28) mostly report a slightly higher effect on psychiatric symptom severity, with effect sizes between 0.3 (28) and 0.81 (7), 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, (14) 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 (19). 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, (14) 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 many patients (55%) in the research sample of the Lorentzen study (28) 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 (29). Furthermore, avoidance results in an increase in the effect of personality on various types of behavioural problems in adolescents (30). 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**

Despite the fact that the PD-DEP patient group had more severe baseline psychopathology on all measures, very similar results were found at treatment termination and at follow-up. Indeed, significant clinical improvements were seen in more patients with comorbid depression. Although remission was seen in more PD patients at treatment termination, the difference in levels of remission between the two patient groups was no longer apparent at follow-up. This suggests that, despite the larger clinical change in the PD-DEP
group, these patients need more time to recover than their counterparts in the PD group, possibly because of their significantly higher baseline psychiatric symptom scores. The study by Renner et al, (12) referred to above also examined the impact of comorbid depression on treatment outcome, mainly for C-cluster personality disorders. They found that comorbid depression had no impact on the effectiveness of therapy after controlling for general symptom severity.

Taken together, these findings suggest that, for a broad group of patients, schema therapy is a favourable treatment option and, as suggested by other studies (12, 31), the presence of comorbid depression does not require shifting the treatment focus to the comorbid disorder.

On the other hand, the majority of patients with severe depressive symptoms did not achieve symptom remission. This could seem logical since they have higher baseline scores, making it more difficult to achieve the defined threshold score for remission. Nevertheless, it is 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 (32, 33).

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 (10).

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.

Conclusion

In 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, 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.

Declarations

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.

Authors’ contributions
DK drafted the manuscript. JP provided statistical 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.

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.

Competing interests
All authors declare that they have no competing interests
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Tables
Due to technical limitations, the tables are only available as a download in the supplemental files section

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