Shorter communication

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

Fritz Renner [a,*], Michiel van Goor [a], Marcus Huibers [a,c], Arnoud Arntz [a], Betty Butz [b], David Bernstein [a]

[a] Department of Clinical Psychological Science, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands
[b] PSY-Q Roermond, The Netherlands
[c] Department of Clinical Psychology, VU University Amsterdam, The Netherlands

ARTICLE INFO

ABSTRACT

The aim of this pilot study was to document the effects of a group schema cognitive-behavioral therapy intervention (SCBT-g; van Vreeswijk & Broersen, 2006) on global symptomatic distress in young adults with personality disorders or personality disorder features. We also sought to determine the stability of maladaptive schemas, schema modes, and coping responses throughout treatment as well as relations among these variables with improvement in symptomatic distress during treatment. Twenty-six young adults (mean age 22.5 years; range: 18–29 years) with a primary diagnosis of a DSM-IV Cluster-B or Cluster-C personality disorder or with personality disorder features participated in the 20-session SCBT-g protocol. Global symptomatic distress decreased substantially from pre-treatment to post-treatment ($d = 0.81$). Maladaptive schemas, schema modes and dysfunctional coping responses decreased with medium to large effect sizes (d's = 0.56 and 0.98, respectively), however decrease in maladaptive schemas was not significant after controlling for symptomatic distress. Adaptive schema modes increased slightly ($d = 0.40$) throughout treatment. Baseline levels of maladaptive schemas predicted symptomatic distress concurrently and at mid-treatment but not at post-treatment. Our findings provide preliminary evidence that SCBT-g might be an effective treatment for young adults with personality disorders or personality disorder features in terms of improvements in global symptomatic distress and underlying vulnerability.

Introduction

Personality disorders usually have their onset in adolescence or early adulthood (American Psychiatric Association, 2005). Adolescents or young adults with personality disorder symptoms suffer from increased functional impairments later in life (Skodol, Johnson, Cohen, Sneed, & Crawford, 2007) and are at an elevated risk of suicidality and development of axis-I disorders in adulthood (Johnson et al., 1999).

Despite the importance of effective treatments for adolescents and young adults with personality disorders, there is a lack of research on the effectiveness of psychotherapeutic interventions

for this patient group. Schema Therapy (ST) is a relatively new integrative treatment approach to chronic axis-I and axis-II disorders (Young, Klosko, & Weishaar, 2003). According to this model, stable and enduring Early Maladaptive Schemas (EMS) are at the core of chronic axis-I and axis-II disorders (Young et al., 2003). The ultimate goal of ST is to decrease the impact of EMS and to replace negative coping responses and schema modes with more healthy ones.

A number of studies support the effectiveness of ST for personality disorders (Bamelis, Evers, Spinhoven, & Arntz, 2013; Farrell, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009; Nordahl & Nysaeter, 2005) and studies in other patient groups are underway (Bernstein, Arntz, & de Vos, 2007; Bernstein et al., 2012; Renner, Arntz, Leeuw, & Huibers, 2013). In a naturalistic study of 63 outpatients with various axis-I disorders and/or personality problems it has been shown that even a short-

* Corresponding author. Tel.: +31 (0)43 3881594; fax: +31 (0)43 3884155.
E-mail address: Fritz.Renner@Maastrichtuniversity.nl (F. Renner).

term group schema cognitive behavioral intervention (SCBT-g; van Vreeswijk & Broersen, 2006) is associated with improvements in overall symptomatology, EMS and schema modes (van Vreeswijk, Spinhoven, Eurelings-Bontekoe, & Broersen, 2012). Providing ST in group format can be a cost-effective alternative to the individual format and has several therapeutic advantages (Farrell et al., 2009).

The group ST model of Farrell and Shaw (1990) should be distinguished from the SCBT-g protocol described by van Vreeswijk and Broersen (2006). While the former places special emphasis on experiential techniques and group processes, the latter is more structured, protocolized and places a greater emphasis on psychoeducation and cognitive techniques. The model of Farrell and Shaw (1990) has a greater focus on schema modes whereas SCBT-g has a greater focus on EMS. The shorter and less intense SCBT-g protocol (van Vreeswijk & Broersen, 2006) might be especially suitable for young adults because core underlying schemas (EMS) of young adults might not be completely formed yet and are therefore less rigid and more amenable to change.

The aim of the current study was to test the effects of SCBT-g on changes in global symptomatic distress in young adults with Cluster-B and Cluster-C personality disorders or with personality disorder features in an open trial. We also aimed to determine the stability of EMS, coping responses and schema modes throughout treatment as well as relations among these variables with improvements in symptomatic distress during treatment.

Methods

Participants

Twenty-eight outpatients recruited from a specialized secondary care facility in the Netherlands (PSY-Q, Roermond) participated in an open trial of SCBT-g (van Vreeswijk & Broersen, 2006). Of the 28 patients who started with SCBT-g, two dropped-out before the mid-treatment assessment (one had borderline personality disorder and one had subthreshold cluster-c and borderline symptoms). Therefore, the analyses are based on the remaining 26 participants who completed treatment and all assessments. The study was approved by the local medical ethics committee and all patients enrolled provided informed consent. The inclusion criteria were a primary diagnosis of a Diagnostic and Statistical Manual for Mental Disorders, fourth edition (DSM-IV; American Psychiatric Association, 2005) axis-II disorder or meeting subthreshold criteria of a DSM-IV axis-II disorder as assessed by the Structured Clinical Inventory for DSM-IV (SCID-II; First, Spitzer, Gibbon, & Williams, 1994); an additional inclusion criteria was an age range between 18 and 29 years. Patients were excluded if they had general group therapy contraindications (e.g. hearing impairments), had suicidal tendencies, self-injury or bursts of aggression.

The average age of the sample entering the study was 22.5 years (range: 18–29 years); 17 were female; 20 lived with their parents, 5 lived independently and one patient lived with a partner. Of the overall sample ten patients did not meet full criteria of a personality disorder, six had avoidant personality disorder, five had borderline personality disorder, three had dependent personality disorder, one had narcissistic personality disorder and one had obsessive compulsive personality disorder. The most common co-morbid axis-I disorders were mood disorders ($n = 10$) and anxiety disorders ($n = 7$).

Procedure

Short-term group schema cognitive-behavioral therapy

The SCBT-g protocol (van Vreeswijk & Broersen, 2006) consisted of 18 weekly sessions plus two booster sessions each lasting 90 min. This highly structured protocol has a special emphasis on the cognitive and behavioral methods and techniques of ST although ST specific techniques such as chair work, limited reparenting and empathic confrontation are also employed. In general the group intervention can be divided into three phases. The first phase consists of three sessions of psychoeducation; the second consists of seven sessions in which mainly cognitive techniques are used; the third phase lasts seven sessions and is primarily focused on identifying schema triggering events and prevention of schema triggering in the future. In contrast to individual ST (Young et al., 2003) SCBT-g has a stronger focus on the present, is more structured and protocolized and places greater emphasis on cognitive techniques and EMS (van Vreeswijk & Broersen, 2006). A more detailed description of the SCBT-g protocol can be found elsewhere (Broersen & Van Vreeswijk, 2012).

In addition to the group intervention patients in the current study were allowed to consult a health care professional once in three weeks for 30 min for social, financial, work or school related problems. In the current study, each of the four groups consisted of six to eight patients. Group therapy was conducted by one of two certified schema therapists. Both therapists had approximately eight years of experience with ST and both were trained in ST techniques during a four-day workshop.

Assessments

Axis-I and axis-II disorders were assessed by two independent psychologists prior to entering the study as part of the routine diagnostic procedure at the clinic using the SCID-I and SCID-II interview. Moreover, patients in this study completed a set of self-report questionnaires before the first group session (pre-treatment), three months into therapy (mid-treatment), and after the second booster session (post-treatment).

Symptom Checklist-90

The Symptom Checklist-90 (SCL-90; Derogatis, 1977) is a 90-item self-report questionnaire that measures general symptomatic distress by averaging all scores. The current study used the Dutch version of the SCL-90 which has been shown to have good psychometric properties (Arrindell & Ettema, 1986). In the present study, internal consistency (coefficient alpha) of the overall scale was 0.98 at pre-treatment.

Schema questionnaire – short form

The Schema Questionnaire (SQ) short form is a 75-item self-report instrument assessing 15 early maladaptive schemas (Young, 1998) derived from the original 205-item version (Young & Brown, 1994). Each item is phrased as a negative core belief regarding oneself or ones relation to others and rated along a 6-point scale. Satisfactory psychometric properties have been reported for the SQ (Waller, Meyer, & Ohanian, 2001). The current study used the Dutch version of the SQ short form (Rijkeboer, 2008). The internal consistency (coefficient alpha) of the overall scale in the current study was 0.96 at pre-treatment.

Schema mode inventory

The schema mode inventory version 1.1 (Young et al., 2007) is a 124-item self-report questionnaire designed to assess 14 schema modes. The SMI has been shown to possess adequate psychometric properties (Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010). Schema modes can be divided into four categories: child modes, dysfunctional coping modes, dysfunctional parent modes, and the healthy adult mode (Young et al., 2003). In the current study we categorized modes into two categories: adaptive schema modes (healthy adult and happy child) and maladaptive schema modes (all other modes) in order to be able to determine

their predictive validity in the context of a relatively small sample size. In the current study the internal consistency (coefficient alpha) was 0.87 for the adaptive schema modes scale and 0.96 for the maladaptive schema modes scale at pre-treatment.

Schema Coping Questionnaire

The schema coping screening questionnaire (van Vreeswijk & Broersen, 2006) was used to assess schema coping strategies. This 16-item questionnaire assesses the coping strategies schema avoidance, schema surrender and schema overcompensation along a 6-point scale. In the current study adequate internal consistency was found for all three subscales (coefficient alpha range = 0.72–0.76).

Statistical analyses

As a general analytic approach we used multilevel modeling with the SCL-90 total score across the three assessment moments as main outcome measure. We used an unstructured covariance structure with linear and quadratic fixed effects for time. To test for change in EMS, schema modes and coping styles over time the same analytical approach as for the main outcome measure was used with the total EMS score, the total SMI score and the total coping styles score as dependent variable, respectively. In these analyses the fixed effect of time(squared) is of primary interest. Significant effects of time(squared) indicate significant change in the dependent variable over time. In order to control for possible statistical dependence within groups and to allow for generalization, group should be added as a nested random effect in the analyses. However, given that there were only four groups in the current study this was not possible. We therefore added group and the time × group interactions as fixed effects to all analyses testing change over time.

In the prediction models we aimed to determine whether pre-treatment levels of EMS, SMI and coping styles predicted treatment outcome. We started with a saturated model by adding the total pre-treatment scores of these variables to the model of linear effects of time as well as the two-way interaction among these variables with the time variable. The two-way interactions among time and EMS, schema modes, and coping styles were of primary interest in these prediction analyses. Non-significant interaction terms were progressively removed backwards from the model. Non-significant lower order terms of corresponding significant interaction terms were retained in the model. For all continuous outcomes effect sizes (Cohen's d)[1] were computed based on estimates from the MLM analyses.

Results

Cross-sectional associations among study variables

First we determined Pearson correlations among total scores of the SCL-90, EMS, SMI, and coping styles before therapy. As can be seen in Table 1, there was a significant association between symptomatic distress as assessed by the SCL-90 and EMS at baseline ($r = .56$, $p < .01$). Moreover maladaptive schema modes were negatively related to adaptive schema modes ($r = -.65$, $p < .01$). The other study variables did not correlate with each other.

Change in symptomatic distress over time

The results of the multilevel analysis are summarized in Table 2. The quadratic effect of time was not significant ($p = .27$) and

therefore removed from the model. There was a significant linear effect of time ($p < .001$, $d = 0.81$) indicating that symptomatic distress decreased with a large effect size (Cohen, 1988) over time (Table 3). The interaction between group and time was not significant ($p = .19$), indicating that decrease in symptomatic distress over time was not significantly different among the four groups.

We also tested for time × diagnostic status (personality disorder diagnosis vs. personality disorder traits not meeting full criteria) interactions to see whether patterns in improvement in symptomatic distress differed for patients meeting full diagnostic criteria of a DSM-IV personality disorder versus patients not meeting full diagnostic criteria for personality disorders. The interaction between time and diagnostic status was not significant ($p = .84$) and after removing the interaction from the model the main effect of diagnostic status was also not significant ($p = .17$).

Change in early maladaptive schemas, schema modes, and dysfunctional coping styles

In the analyses of change in EMS over time the quadratic effect of time was not significant ($p = .16$) and therefore removed from the model. After removal there was a significant main effect of time ($p < .01$) indicating that on average EMS decreased with a large effect size ($d = 0.88$) over time (Table 3). The interaction between group and time was not significant ($p = .07$). Given previous findings suggesting that scores on the schema questionnaire are mood-state dependent (Stopa & Waters, 2005), we also entered the SCL-90 depression subscale as a time-varying predictor to the analyses of change in EMS. After controlling for change in depression levels the main effect of time was not significant anymore ($p = .08$). Similar results were found after controlling for change in overall symptomatic distress (excluding change in depression; main effect of time: $p = .12$). Finally, to determine whether change in EMS also accounts for changes in symptomatic distress we entered the SCL-90 total score as dependent variable and EMS as time-varying covariate. After controlling for changes in EMS the main effect of time remained significant ($p < .001$).[2]

In the analyses of change in maladaptive schema modes over time the linear effect of time was not-significant ($p = .08$) but the quadratic time effect was significant ($p < .01$) indicating that maladaptive schema modes reduced in the second half of treatment (Table 3). At post-test, the reduction in maladaptive mode ratings was a moderate effect, $d = 0.56$. In these analyses the time-squared × group interaction was not significant ($p = .26$) and neither was the group × time interaction ($p = .07$).

In the analyses of change in adaptive schema modes the linear effect of time was significant ($p < .01$) as was the quadratic effect of time ($p < .01$). As can be seen in Table 3, adaptive schema modes increased from pre-treatment to post-treatment although the effect size was rather small ($d = 0.40$). In these analyses there was a significant interaction between group and time ($p < .01$). Whereas on average the four groups had increased adaptive schema modes at post-test one of the groups showed a decrease from pre-test to post-test on the adaptive schema modes.

Finally dysfunctional coping responses were entered as dependent variable. After deleting the non-significant quadratic effect for time ($p = .80$) there was a significant main effect of time ($p < .001$)

---

[1] Cohen's d = (Baseline mean − mean at time i)/(SQRT baseline variance).

[2] As requested by an anonymous reviewer, we also examined whether the SMI-changes accounted for changes in symptomatic distress. In these analyses, the main effect of time remained significant when controlling for change in maladaptive schema modes ($p = .002$), or when controlling for change in adaptive schema modes ($p < .001$), suggesting that changes in symptomatic distress were not better accounted for by changes in schema modes.

Table 1
Means, standard deviations, and Pearson correlations between SCL-90 scores, EMS, SMI and coping styles at baseline.

Measure	1	2	3	4	5
1. SCL-90	2.30 (0.17)				
2. EMS	0.56*	2.99 (0.73)			
3. SMI Maladaptive	0.20	0.11	23.47 (5.17)		
4. SMI Adaptive	−0.26	−0.13	−0.65*	34.19 (7.45)	
5. Coping styles	0.18	0.19	0.35	−0.29	64.00 (13.36)

Note. The off-diagonal shows correlation coefficients; the diagonal shows observed means and standard deviations; $N = 26$; SCL-90 = Symptom Checklist 90 total score, EMS = Early Maladaptive Schemas total score; SMI Maladaptive = Schema Mode Inventory total score of maladaptive schema modes, SMI Adaptive = Schema Mode Inventory total score of adaptive schema modes; * Correlation significant at $p < .05$ (2-tailed).

indicating that dysfunctional coping responses decreased strongly over time ($d = 0.98$; Table 3). The interaction between group and time was not significant ($p = .43$).

Moderation by age

To test whether change in symptomatic distress, EMS, schema modes and coping responses is moderated by age we added to each of the analyses described above a main effect for age and age × time(squared) 2-way interactions. In the model predicting change in EMS the interaction between age and time was significant ($p < .01$). To interpret this interaction we used the median split and plotted the predicted change in EMS of participants who were 22.5 years or younger and those who were 22.5 years or older (Fig. 1). Decrease in EMS over time was stronger in younger patients (within group effect size younger group: $d = 1.40$; within group effect size older group: $d = 0.46$). Age was unrelated to change in the other study variables (all p-values $>.05$).

Prediction analyses

We also tested whether baseline levels of EMS, adaptive and maladaptive schema modes and coping responses predicted change in symptomatic distress over time. In these analyses we added EMS, schema modes, and coping responses at pre-treatment as predictors to the MLM of change in symptomatic distress over time. Due to the relatively large number of predictors and the small

sample size we only tested for interactions with linear time effects in these analyses. The time × coping, time × maladaptive schema modes and the time × adaptive schema modes interactions were not significant (all p-values $>.05$). After removing the non-significant interactions progressively, there was a significant time × EMS interaction, $p < .01$. Baseline EMS were positively related to symptomatic distress concurrently ($r = .88$) and at mid-treatment ($r = .67$) but not at post-treatment ($r = .09$).

Discussion

The primary aim of the current study was to test the effects of a short-term group schema cognitive-behavioral intervention (SCBT-g) on changes in global symptomatic distress in young adults with personality disorders or personality disorder features. Until now, the effects of SCBT-g have only been tested by their developers (van Vreeswijk et al., 2012) but not by an independent research team. We found that global symptomatic distress decreased significantly ($d = 0.81$) from pre-treatment to post-treatment. The effect size (Cohen's d) in the current study was slightly higher than the effect size that has been reported in a recent study on SCBT-g in a mixed clinical group of psychiatric outpatients (SCL-90: $d = 0.66$; van Vreeswijk et al., 2012). One explanation for this might be that the current study focused specifically on young adults whereas the study by van Vreeswijk et al. (2012) included participants with a wider age range (age completers: $M = 39.35$; $SD = 8.05$).

EMS and dysfunctional coping responses also decreased significantly and with large effect sizes from pre-treatment to post-treatment (d's = 0.88 and 0.98, respectively), whereas the increase in adaptive schema modes was small ($d = 0.40$). After controlling for changes in depressive symptoms and overall symptomatic distress, change in EMS over time was not significant anymore. Some items of the schema questionnaire are formulated in such a way that they are unlikely to change because they are referring to experiences in the past whereas other items refer to current experiences and are therefore more likely to change. It is

Table 2
Results of mixed model analyses. Change in SCL-90, early maladaptive schemas, maladaptive and adaptive schema modes and dysfunctional coping styles over time. All analyses are adjusted for group and time (squared) by group interactions.

	Estimate	SD	DF	F	p
Primary analysis					
Change in SCL-90					
Intercept	2.24	0.32	22	271.20	<0.001
Time	−0.06	0.13	22	23.79	<0.001
Secondary analyses					
Change in EMS					
Intercept	2.72	0.24	22	842.48	<0.001
Time	−0.10	0.18	22	13.12	<.01[a]
Change in maladaptive schema modes					
Intercept	20.95	2.21	22	550.30	<0.001
Time	7.01	2.69	22	3.47	0.08
Time2	−3.13	1.26	22	9.34	<0.01
Change in adaptive schema modes					
Intercept	40.80	2.98	22	687.84	<0.001
Time	−21.40	4.84	22	9.86	<0.01
Time2	8.40	2.29	22	13.52	<0.01
Change in dysfunctional coping responses					
Intercept	59.33	6.13	22	546.82	<0.001
Time	−1.66	3.48	22	17.04	<0.001

Note. $N = 26$; SCL-90 = Symptom Checklist 90 total score, EMS = Early Maladaptive Schemas total score; SMI Maladaptive = Schema Mode Inventory total score of maladaptive schema modes, SMI Adaptive = Schema Mode Inventory total score of adaptive schema modes.
[a] $p = .08$ after controlling for change in depression levels.

Table 3
Means and standard deviations of general symptom levels, early maladaptive schemas, maladaptive and adaptive schema modes and dysfunctional coping styles during short-term group schema therapy.

Measure	Pre-treatment Mean (SD)	Mid-treatment Mean (SD)	Post-treatment Mean (SD)	Post-treatment Effect-Size (d)
SCL-90	2.34 (0.73)	2.04 (0.63)	1.75 (0.52)	0.81
EMS	3.09 (0.66)	2.80 (0.57)	2.51 (0.68)	0.88
SMI Maladaptive	23.47 (4.95)	23.60 (4.86)	20.70 (4.89)	0.56
SMI Adaptive	34.19 (6.67)	32.08 (8.09)	36.87 (9.13)	0.4
Coping	64.00 (13.71)	57.27 (13.91)	50.54 (14.31)	0.98

Note. Means and standard deviations are based on estimates from the multi-level models; $d =$ (pre-treatment mean - post-treatment mean)/pre-treatment SD; SCL-90 = Symptom Checklist-90; EMS = Early Maladaptive Schemas; SMI = Schema Mode Inventory.
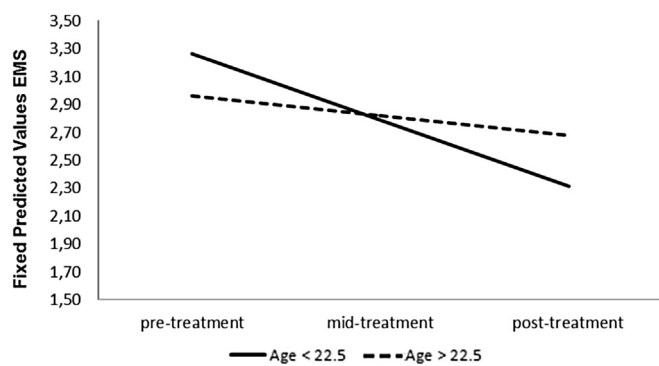
Fig. 1. Moderation of change in EMS by age.

possible that the items that are referring to current experiences changed together with symptomatic distress which would also explain why changes in symptomatic distress accounted for changes in EMS but not the other way around. Our finding that EMS remained stable is in line with previous research demonstrating the stability of EMS over time (Riso et al., 2006) and following treatment (Renner, Lobbestael, Peeters, Arntz, & Huibers, 2012). ST delivered over longer-periods of time might be necessary to achieve deeper change in EMS. For example, one previous study reported moderate decreases in EMS ($d = 0.69$) following 1.5 years of individual ST for borderline personality disorder (Nadort et al., 2009).

Our finding that change in EMS was moderated by the age of patients at study entry suggests that EMS in younger people might be more flexible and changeable during treatment. This explanation remains speculative because the two age groups might also have differed with respect to variables other than age that might have accounted for the differential change patterns.

In the current study maladaptive schema modes did not change significantly from pre-treatment to mid-treatment but did change significantly from mid-treatment to post-treatment ($d = 0.56$). In the first sessions of ST schema modes are identified and one would therefore not expect modes to change during these initial sessions. Based on theory schema modes might even increase during the initial phases of ST because the patient might activate modes that protect (e.g., detached protector mode) the inner vulnerable side of the self (vulnerable child mode; Arntz, 2012). Modes might also represent the most stable manifestation of PD-pathology. SCBT-g has a stronger emphasis on cognitive and behavioral techniques (Broersen & Van Vreeswijk, 2012) but schema modes are typically described as emotional states (Young et al., 2003). Therefore, schema modes might be better targeted by ST interventions that have a stronger focus on experiential techniques.

Finally, we found that patients with high EMS levels at pre-treatment also tended to report higher levels of symptomatic distress at pre-treatment and showed less improvement in symptomatic distress at mid-treatment, however, this effect disappeared at post-treatment. This finding suggests that SCBT-g is suited for patients with both lower and higher EMS levels upon entering treatment.

Limitations

First, we did not include a control group and therefore any improvements that were found cannot be attributed with certainty to treatment. It is possible that the observed decrease in global symptomatic distress is due to attention, other nonspecific factors, or regression to the mean effects. Second, the sample size of the current study was relatively small and therefore our results should

be replicated in larger samples and in more controlled settings. Third, we did not assess long-term effects of participating in the group intervention. Fourth, we could not determine the stability and associations of specific EMS and specific schema modes with improvement in symptomatic distress due to the relatively small sample size. Fifth, although we found decreased global symptomatic distress, it is unlikely that a short-term treatment would results in clinically relevant structural reductions in personality disorder symptoms. The decreases in global symptomatic distress in the current study likely reflect state fluctuations in symptomatology rather than structural changes in personality disorders. Moreover, we relied entirely on self-report instruments and it is possible that change in self-reported global symptomatic distress is more likely to represent an artifact of the research design rather than real changes in underlying symptom severity. Consequently, our results might have differed if we had assessed symptom severity or diagnostic status at post-treatment using interview based techniques. Finally, the final decision on whether or not an eligible patient could participate in the group intervention was taken in an interdisciplinary staff meeting. It is therefore possible that the sample is biased and not representative for the broader range of young adults with personality disorders and personality disorder features.

Implications

The results of this study add to the emerging body of evidence (Farrell et al., 2009) showing that group ST might be an effective treatment for patients with personality disorders. Our finding that even a short-term group ST intervention is effective in reducing symptomatic distress as well as the impact of hypothesized underlying vulnerability factors replicates and extends previous findings (van Vreeswijk et al., 2012). Short-term ST interventions might be a viable cost-effective alternative to the more intense long-term individual format, especially in young adults with personality disorders or personality disorder features.

The finding that young adults not meeting full DSM-IV criteria for personality disorder might also benefit from ST in terms of improvement in global symptomatic distress is particularly important in the context of the debate on whether it is possible to diagnose personality disorders in adolescents (Vito, Ladame, & Orlandini, 1999). Given the reluctance of many health care professionals to diagnose personality disorders in adolescence, ST might also be indicated in younger adolescence (under age 18) with personality disorder features, difficult personality traits or other precursors of personality disorders.

Conflict of interest

None.

References

American Psychiatric Association. (2005). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, D.C.: American Psychiatric Association.

Arntz, A. (2012). Schema therapy for cluster C personality disorders. In M. F. Van Vreeswijk, J. Broersen, & M. Nadort (Eds.), *The Wiley-Blackwell handbook of schema therapy: Theory, research, and practice* (pp. 397–414). Chichester, UK: John Wiley & Sons, Ltd.

Arrindell, W. A., & Ettema, J. H. M. (1986). *SCL-90, Handleiding bij een multi-dimensionele psychopathologie indicator*. Lisse: Swets & Zeitlinger.

Bamelis, L. L. M., Evers, S. M. A. A., Spinhoven, P., & Arntz, A. (2013). Results of a multicentered randomized controlled trial on the clinical effectiveness of schema therapy for personality disorders, (in press).

Bernstein, D. P., Arntz, A., & de Vos, M. (2007). Schema focused therapy in forensic settings: theoretical model and recommendations for best clinical practice. *The International Journal of Forensic Mental Health, 6*(2), 169–183. http://dx.doi.org/10.1080/14999013.2007.10471261.

Bernstein, D. P., Nijman, H. L. I., Karos, K., Keulen-de Vos, M., de Vogel, V., & Lucker, T. P. (2012). Schema therapy for forensic patients with personality disorders: design and preliminary findings of a multicenter randomized clinical trial in the Netherlands. *International Journal of Forensic Mental Health, 11*(4), 312–324. http://dx.doi.org/10.1080/14999013.2012.746757.

Broersen, J., & Van Vreeswijk, M. F. (2012). Schema therapy in groups: a short-term schema CBT protocol. In M. F. Van Vreeswijk, J. Broersen, & M. Nadort (Eds.), *The Wiley-Blackwell handbook of schema therapy theory, research, and practice* (pp. 373–381). Chichester, UK: John Wiley & Sons, Ltd.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2 ed.). Hillsdale, NJ: Erlbaum.

Derogatis, L. (1977). *SCL-90-R, administration, scoring & procedures manual for the R(evised) version*. Baltimore: John Hopkins University School of Medicine.

Farrell, J. M., & Shaw, I. A. (1990). *Emotional awareness training for borderline personality disorder patients: A treatment manual*. Unpublished manuscript for NIH RO3. Indianapolis: Indiana University School of Medicine.

Farrell, J. M., Shaw, I. A., & Webber, M. A. (2009). A schema-focused approach to group psychotherapy for outpatients with borderline personality disorder: a randomized controlled trial. *Journal of Behavior Therapy and Experimental Psychiatry, 40*(2), 317–328.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1994). *Structured Clinical Interview for DSM-IV Axis II personality disorders (SCID-II)*. New York: New York State Psychiatric Institute, Biometrics Research Department.

Giesen-Bloo, J., van Dyck, R., Spinhoven, P., van Tilburg, W., Dirksen, C., van Asselt, T., et al. (2006). Outpatient psychotherapy for borderline personality disorder: randomized trial of schema-focused therapy vs transference-focused psychotherapy. *Archives of General Psychiatry, 63*(6), 649–658.

Johnson, J. G., Cohen, P., Skodol, A. E., Oldham, J. M., Kasen, S., & Brook, J. S. (1999). Personality disorders in adolescence and risk of major mental disorders and suicidality during adulthood. *Archives of General Psychiatry, 56*(9), 805–811. http://dx.doi.org/10.1001/archpsyc.56.9.805.

Lobbestael, J., van Vreeswijk, M., Spinhoven, P., Schouten, E., & Arntz, A. (2010). Reliability and validity of the short Schema Mode Inventory (SMI). *Behavioural and Cognitive Psychotherapy, 38*(04), 437–458. http://dx.doi.org/10.1017/S1352465810000226.

Nadort, M., Arntz, A., Smit, J. H., Giesen-Bloo, J., Eikelenboom, M., Spinhoven, P., et al. (2009). Implementation of outpatient schema therapy for borderline personality disorder with versus without crisis support by the therapist outside office hours: a randomized trial. *Behaviour Research and Therapy, 47*(11), 961–973.

Nordahl, H. M., & Nysaeter, T. E. (2005). Schema therapy for patients with borderline personality disorder: a single case series. *Journal of Behavior Therapy and Experimental Psychiatry, 36*(3), 254–264.

Renner, F., Arntz, A., Leeuw, I., & Huibers, M. (2013). Treatment for chronic depression using schema therapy. *Clinical Psychology Science and Practice* (in press).

Renner, F., Lobbestael, J., Peeters, F., Arntz, A., & Huibers, M. (2012). Early maladaptive schemas in depressed patients: stability and relation with depressive symptoms over the course of treatment. *Journal of Affective Disorders, 136*(3), 581–590.

Rijkeboer, M. M. (2008). *Schema-Vragenlijst Verkorte Vorm*. Utrecht: Ambulatorium Universiteit Utrecht.

Riso, L. P., Froman, S. E., Raouf, M., Gable, P., Maddux, R. E., Turini-Santorelli, N., et al. (2006). The long-term stability of early maladaptive schemas. *Cognitive Therapy and Research, 30*(4), 515–529.

Skodol, A. W. E., Johnson, J. G., Cohen, P., Sneed, J. R., & Crawford, T. N. (2007). Personality disorder and impaired functioning from adolescence to adulthood. *The British Journal of Psychiatry, 190*(5), 415–420. http://dx.doi.org/10.1192/bjp.bp.105.019364.

Stopa, L., & Waters, A. (2005). The effect of mood on responses to the Young Schema Questionnaire: short form. *Psychology and Psychotherapy: Theory, Research and Practice, 78*(1), 45–57.

van Vreeswijk, M. F., & Broersen, J. (2006). *Schemagerichte Therapie in Groepen. Cognitieve Groepspsychotherapie bij Persoonlijkheidsproblematiek. Handleiding voor Therapeuten*. Houten: Bohn Stafleu van Loghum.

van Vreeswijk, M. F., Spinhoven, P., Eurelings-Bontekoe, E. H. M., & Broersen, J. (2012). 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. *Clinical Psychology & Psychotherapy*, http://dx.doi.org/10.1002/cpp.1813.

Vito, E., Ladame, F., & Orlandini, A. (1999). *Adolescence and personality disorders: Current perspectives on a controversial problem*. New York: Kluwer Academic/Plenum.

Waller, G., Meyer, C., & Ohanian, V. (2001). Psychometric properties of the long and short versions of the Young Schema Questionnaire: core beliefs among bulimic and comparison women. *Cognitive Therapy and Research, 25*(2), 137–147.

Young, J. E. (1998). *The Young Schema Questionnaire: Short form* (1st ed.). New York: Cognitive Therapy Center.

Young, J. E., Arntz, A., Atkinson, T., Lobbestael, J., Weishaar, M. E., van Vreeswijk, M. F., et al. (2007). *The Schema Mode Inventory (SMI)*. New York: Schema Therapy Institute.

Young, J. E., & Brown, G. S. (1994). Young Schema Questionnaire. In J. E. Young (Ed.), *Cognitive therapy for personality disorders: A schema-focused approach*. Sarasota, FL: Professional Research Exchange.

Young, J. E., Klosko, J., & Weishaar, M. E. (2003). *Schema therapy: A practitioner's guide*. New York: Guilford Press.