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# *Early Maladaptive Schemas in Patients with or without Personality Disorders: Does Schema Modification Predict Symptomatic Relief?*

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**Schema Therapy (ST) proposes that early maladaptive schemas (EMSs) are at the core of personality pathology and psychological distress, in particular personality disorder and chronic interpersonal difficulties. Therapeutic change in ST is based on the modification of early maladaptive schemas and associated coping behaviours. Some of these basic assumptions in the ST model were tested. It was hypothesized that EMSs are related to symptomatic distress but in particular personality pathology and personality disorder. Furthermore, schema modification should predict level of symptomatic distress by the end of treatment. Patients ($N$ = 82) from a psychiatric outpatient clinic were assessed with SCID I and II and self-report inventories measuring a variety of psychiatric symptoms prior to and after treatment. The results were supportive of the ST model and showed that levels of early maladaptive schemas were related to personality pathology and that modification of early maladaptive schemas strongly predicted symptom relief by the end of treatment.**


Schema Therapy (ST) aims to treat patients with chronic interpersonal problems characterized by vague and ill defined complaints often associated with complex personality disorders (McGinn & Young, 1996; Young, 1994). Schema Therapy was developed from a broad range of approaches and combines cognitive–behavioural techniques with elements of interpersonal, experiential, and psychodynamic therapies (Beck, 1967; Berne, 1964; Lazarus, 1981; Mahoney, 1993; Millon, 1981). The early maladaptive schema is the core and unifying concept on which a model of personality (Young & Gluhoski, 1996), psychopathology (Bricker, Young, & Flanagan, 1993; McGinn & Young, 1996) and psychotherapy (Young & Behary, 1998; Young, Klosko, & Weisshar, 2003) is built.

Young has proposed that the early maladaptive schema (EMS) refers to the deepest level of cognitive structures, and he defines the EMS as 'a broad pervasive theme regarding oneself and one's relationship with others' (McGinn & Young, 1996, p. 188). The EMS has cognitive, affective and behavioural components. Like adaptive schemas,

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the EMS is formed in early childhood through a combination of genetic disposition, biological factors and environmental experiences. Young stresses that one of the most important etiological pathways in developing EMSs is the individual's early, adverse experiences with parents, siblings or peers during childhood. The developing child may be prevented from having his or her basic needs satisfied, where the schemas evolve as a product of the child's attempts to make sense of his or her experience. The various EMSs create specific vulnerabilities for various forms of psychological distress and personality pathology. When the EMSs are activated, high levels of affect are generated and lead directly or indirectly to various forms of psychological distress, such as depression, anxiety, loneliness, inadequate working ability, substance abuse, interpersonal conflicts or difficulties and so forth. Thus the main target for intervention in ST is the modification both of the EMS and the coping style linked to it. Coping may take the forms of surrender, avoidance or compensation, which are processes that relieve distress in the short term but strengthen the EMSs (Young, 1994). Various types of early maladaptive schemas are measured in Young's Schema Questionnaire: (1) Emotional deprivation; (2) Abandonment/instability; (3) Mistrust/abuse; (4) Social isolation; (5) Defectiveness/shame; (6) Failure to achieve; (7) Dependency; (8) Vulnerability to harm; (9) Enmeshment/undeveloped self; (10) Subjugation; (11) Self-sacrifice; (12) Emotional inhibition; (13) Unrelenting standards; (14) Entitlement; (15) Insufficient self-control.

Early maladaptive schemas have been assessed or treated in patients with a range of axis I disorders, including depression (Shah & Waller, 2000; Young, Beck, & Weinberger, 1993), anxiety disorders (Hedley, Hoffart, & Sexton, 2001; Hoffart, Versland, & Sexton, 2002), traumas and abuse (McGinn, Young, & Sanderson, 1995), bulimia nervosa (Leung, Waller, & Thomas, 2000; Waller, Meyer, & Ohanian, 2001) or substance dependence (Ball & Cecero, 2002; Ball & Young, 2000). However, the efficacy of Schema Therapy has not, to our knowledge, been tested in a randomized controlled trial of any psychiatric disorder so far.

Although the formulations of the EMSs were not developed to correspond directly to specific personality disorders, the schemas are supposed to define core structures in various personality pathology patterns (Bricker et al., 1993; Young & Behary, 1998). Petrocelli and colleagues (Petrocelli, Brian, Glaser, Calhoun, & Campell, 2001) examined whether the various EMSs discriminated between clusters of personality disorders as should be expected by the model. They found that substantial relationships exist between five EMSs and five psychometrically extracted clusters of personality disorders based on the MCMI-II. In the Petrocelli et al. study (2001) five EMSs accounted for most of the variance of the five personality subtypes, which indicates that there is some specificity of schemas to specific personality patterns. Schmidt and colleagues (Schmidt, Joiner, Young, & Telch, 1995) reported that high scores on the Young Schema Questionnaire (YSQ; Young & Brown, 1991) were significantly correlated with axis I and axis II symptoms. They used the Personality Diagnostic Questionnaire—Revised (PDQ-R; Hyler, Skodol, Kellman, Oldham, & Rosnick, 1990) and found the strongest relationship between Insufficient self-control or Defectiveness and the presence of personality disorder symptoms (Schmidt et al., 1995).

Even though interest in ST has been increasing in recent years, research devoted to an empirical assessment of the early maladaptive schemas or Schema Therapy has been scarce. Important questions about the role of schemas in personality pathology and the predictive validity of the YSQ for therapeutic outcome remains, to our knowledge, to be fully addressed in empirical trials.

The present study aims to investigate in more detail how the various EMSs are connected with patients with and without personality disorders. The following hypotheses were investigated. First, early maladaptive schemas are related to general symptomatic distress in psychiatric patients, but predominantly to personality pathology. Second, the presence of early maladaptive schemas will be higher for patients with personality disorder (PD) compared with patients with no PD. Third, modification of the schemas should significantly predict symptom relief as measured by scores on the general symptom index.

It should be noted that our aim was not to conduct a trial of the efficacy of ST per se, but rather to focus on the proposed relationship between schemas and symptoms and personality disorder traits as they change during therapy.

## METHOD

### *Participants*

One hundred and four patients from the psychiatric outpatient clinic at Levanger Psychiatric

Hospital in Norway participated in the study. They were referred by general practitioners for treatment at the outpatient clinic. Patients were excluded from the study if they were acutely suicidal or had a diagnosis of drug addiction or psychotic disorder. A total of 22 patients were excluded from the study, and 82 subjects were included. The patients included in the study consisted of 36 males (44%) and 46 females with a mean age of 37.7 years (SD = 10.7, range 19–68).

### *Assessment of Axis I Diagnoses*

Axis I diagnoses were obtained using the Structured Clinical Interview for DSM-IV, axis I (SCID-I/P) (First, Spitzer, Gibbon, & Williams, 1995). Fifty-four percent ($N = 44$) of the total sample met the criteria for an axis I diagnosis only, and the occurrences of the most frequent diagnoses were as follows: social phobia 21%; major depression 20%; dysthymia 10%; obsessive compulsive disorder 10%; panic disorder with agoraphobia 8%; generalized anxiety disorder 8%. To evaluate the inter-rater reliability of axis I diagnoses, 20 interviews were videotaped and independently rated by two clinical psychologists. The kappa coefficients for the most frequent axis I disorders of social phobia, major depression and dysthymia were 0.87, 0.81, and 0.73 respectively.

### *Assessment of Axis II Diagnoses*

The Structured Clinical Interview for DSM-IV axis II Personality was used to assess personality disorder (First, Spitzer, Gibbon, Williams, & Benjamin, 1994). Of the total sample, forty-six percent of the patients ($N = 38$) met one or more diagnoses of personality disorder and the prevalences of personality disorder among the patients with axis II disorders were as follows: avoidant 44%; paranoid 14.8%; dependent 9.6%; borderline 9.6%; obsessive 9.6%; histrionic 8%; schizoid 3% and other PD 1.4%. To evaluate the inter-rater reliability of the axis II diagnoses, 20 interviews were rated by two clinical psychologists. The kappa coefficient for the presence or absence of any personality disorder was acceptable (0.82).

### *Measures*

The SCL-90-R (SCL-90-R; Derogatis, 1983, 1992) is a 90-item, self-report questionnaire designed to assess psychiatric symptoms of both psychiatric and medical patients. It consists of nine sub-scales comprising a broad spectrum of psychiatric and somatic symptoms, which can be calculated separately. Each item is rated on a five-point Likert scale of symptomatic distress, which ranges from 0 (not at all) to 4 (extremely). Derogatis has reported high internal consistency for each of the nine symptom dimensions in the SCL-90 and a good test–retest reliability over a two week period (Derogatis, 1983). Furthermore, it has been found to have moderate to high convergent validity with related MMPI scales (Derogatis, 1992). A global symptom severity index (GSI) score was calculated in the present study, which refers to the average score of all the nine scales in the SCL-90-R.

The Young Schema Questionnaire (YSQ, 2nd version; Young & Brown, 1991) is a 205-item self-report questionnaire designed to assess 15 early maladaptive schemas (EMSs). The patient rates how accurately the statements describe him or her on a six-point Likert scale from 1 (never true of me) to 6 (almost always true of me).

Schmidt et al. (1995) reported considerable support for the factor structure of the Schema Questionnaire in a sample of 1129 students and 187 patients, in which they found 15 factors emerged (Schmidt et al., 1995). Moreover, the overall factor structure of the YSQ was also highly supported in our own study. Using a sample of 871 patients clearly yielded 15 early maladaptive schemas (Hoffart et al., 2004). The factor structure of the YSQ of the Norwegian study corresponded well with a clinical sample of 433 patients in an Australian study, where the same EMSs emerged as independent factors (Lee, Taylor, & Dunn, 1999). These studies show similar results and provide support for a reliable structure of 15 early maladaptive schemas as measured by the questionnaire.

### *Procedure*

All patients were asked to sign an informed consent form for participation in the study. Prior to treatment all patients were administered the SCID-I (First et al., 1995) and the SCID-II (First et al., 1994). Also, a number of self report measures were administered, such as the SCL-90-R (Derogatis, 1992), Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979), Beck Anxiety Inventory (BAI; Beck & Steer, 1993), and YSQ (Young &

 

Brown, 1991). On the fifth and the last session the patients were re-administrated the self-report inventories. Three experienced clinical psychologists were responsible for delivering schema-focused treatment and for administering the inventories.

### *Statistical Analyses*

Bivariate correllations were computed in the first statistical analysis to investigate associations between early maladaptive schemas, personality traits and GSI pre-treatment scores. Due to the multiple analyses needed, a Bonferroni correction was applied and the significance level was set to $p < 0.003$. A between-subjects analysis of covariance (ANCOVA) was performed on early maladaptive schemas with absence or presence of personality disorder as the grouping variable. As a covariate we used the GSI pre-treatment level. Hierarchical multiple regression analyses were performed to find the predictive properties of change in the specific EMSs, and level of post-treatment GSI was used as the dependent variable. We controlled for age, sex and the GSI pre-treatment levels. Analyses were performed by SPSS-11.

## RESULTS

The relationships between symptomatic distress (pre-treatment GSI scores), the EMSs and the personality traits are presented in Table 1. A Bonferroni correction was performed ($0.5/12 \times 15$) in order to avoid type 1 errors. All the EMSs, except for Emotional deprivation, Entitlement and Enmeshment, were strongly related to symptomatic distress. Some of the early maladaptive schemas, such as Mistrust/abuse, Defectiveness/shame and Emotional deprivation, were associated with personality traits such as paranoid, dependent and borderline personality traits, whereas obsessive and passive-aggressive traits were related to entitlement and insufficient self-control. In contrast, patients with antisocial, schizoid and schizotypal personality traits did not have any significant associations with any of the EMSs, and narcissistic personality traits were associated with Vulnerability to harm, Emotional inhibition and Insufficient self-control. Of all the personality disorder traits it was only the dependent trait that was related to symptomatic distress.

Between-subjects analyses of covariance (ANCOVAs) were performed on each of the specific early maladaptive schemas toward presence/absence of any personality disorder. We used the pre-treatment levels of symptoms as a covariate in order to remove the effects of unequal severity of symptomatic distress among the participants. Table 2 shows significant main effects for patients with any personality disorder for 12 of the 15 EMSs compared to patients without any personality disorder. Overall, the differences were quite substantial and demonstrate significantly higher levels in

Table 1. Correlation matrix with Bonferroni correction of the various early maladaptive schemas, SCID-II personality traits and level of symptomatic stress for 82 outpatients

| | SZT | SID | PAR | HIS | NAR | BOR | ASO | AVO | DEP | OBS | PAG | GSI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Emotional deprivation (ED) | 0.22 | 0.23 | 0.53** | 0.07 | 0.11 | 0.33* | 0.12 | 0.18 | 0.26 | 0.17 | 0.26 | 0.29 |
| Abandonment (AB) | 0.18 | 0.09 | 0.52** | 0.12 | 0.31 | 0.46** | 0.06 | 0.28 | 0.46** | 0.23 | 0.32* | 0.44** |
| Mistrust/abuse (MA) | 0.07 | 0.22 | 0.56** | 0.06 | 0.31 | 0.31* | –0.03 | 0.31* | 0.33* | 0.22 | 0.32* | 0.47** |
| Social isolation (SI) | 0.25 | 0.23 | 0.52** | 0.17 | 0.25 | 0.37** | 0.10 | 0.38** | 0.46** | 0.36** | 0.22 | 0.43** |
| Defectiveness/shame (DS) | 0.11 | 0.17 | 0.55** | 0.07 | 0.25 | 0.40** | 0.00 | 0.24 | 0.39** | 0.33* | 0.28 | 0.41** |
| Failure to achieve (FA) | 0.18 | 0.13 | 0.38** | –0.08 | 0.22 | 0.15 | –0.07 | 0.35** | 0.33* | 0.15 | 0.23 | 0.40** |
| Dependent/incompetent (DI) | –0.05 | –0.00 | 0.31* | 0.02 | 0.23 | 0.32* | –0.04 | 0.19 | 0.37** | 0.24 | 0.29 | 0.46** |
| Vulnerability to harm (VH) | 0.04 | 0.02 | 0.43** | 0.16 | 0.39** | 0.36** | –0.02 | 0.17 | 0.26 | 0.23 | 0.40** | 0.54** |
| Enmeshment (EM) | 0.14 | –0.06 | 0.15 | 0.10 | 0.11 | 0.15 | 0.08 | 0.12 | 0.32* | 0.22 | 0.21 | 0.30 |
| Social subjugation (SB) | 0.14 | 0.08 | 0.30 | 0.04 | 0.25 | 0.28 | –0.00 | 0.35** | 0.53** | 0.24 | 0.24 | 0.57** |
| Self-sacrifice (SS) | 0.17 | 0.05 | 0.16 | 0.13 | 0.11 | 0.26 | 0.03 | 0.09 | 0.34* | 0.05 | 0.16 | 0.45** |
| Emotional inhibition (EI) | 0.08 | 0.21 | 0.26 | 0.03 | 0.31* | 0.09 | –0.02 | 0.33* | 0.26 | 0.52** | 0.23 | 0.37** |
| Unrelenting standards (US) | 0.12 | 0.05 | 0.14 | 0.13 | 0.19 | 0.12 | 0.19 | 0.02 | 0.22 | 0.28 | 0.24 | 0.32* |
| Entitlement (ET) | –0.07 | 0.02 | 0.05 | 0.31* | 0.24 | 0.10 | 0.00 | 0.02 | 0.04 | 0.39** | 0.38** | 0.22 |
| Insufficient self-control (IS) | –0.04 | –0.04 | 0.24 | 0.26 | 0.33* | 0.27 | 0.10 | 0.05 | 0.22 | 0.42** | 0.32* | 0.39** |
| General symptom index (GSI) | 0.08 | –0.02 | 0.19 | 0.04 | 0.21 | 0.28 | 0.00 | 0.12 | 0.38** | 0.15 | 0.26 | – |

*$p < 0.003$, **$p < 0.001$. Abbreviations: SZT = schizotypal, SID = schizoid, PAR = paranoid, HIS = histrionic, NAR = narcissistic, BOR = borderline, ASO = anti-social, AVO = avoidant, DEP = dependent, OBS = obsessive, PAG = passive aggressive, GSI = general symptom index pre score.

 

Table 2. Means and differences between patients with and without any personality disorder on the various early maladaptive schemas, using pre-treatment level of symptomatic distress as covariate

| Maladaptive schema | Axis I (no PD) ($N$ = 44) | | Axis II (any PD) ($N$ = 38) | | $F$ | $p$ |
|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | | |
| Abandonment (AB) | 34.50 | 12.99 | 55.55 | 20.56 | 27.68 | 0.001 |
| Social isolation (SI) | 17.93 | 8.21 | 29.31 | 11.95 | 22.04 | 0.001 |
| Mistrust/abuse (MA) | 31.72 | 12.31 | 47.05 | 18.66 | 16.22 | 0.001 |
| Defectiveness (DS) | 22.22 | 10.31 | 37.89 | 17.31 | 13.26 | 0.001 |
| Subjugation (SB) | 22.40 | 10.14 | 30.57 | 9.61 | 10.73 | 0.002 |
| Emotional deprivation (ED) | 18.86 | 10.08 | 27.76 | 12.09 | 10.50 | 0.002 |
| Emotional inhibition (EI) | 20.04 | 9.05 | 27.02 | 8.74 | 9.50 | 0.003 |
| Failure to achieve (FA) | 16.68 | 9.97 | 24.86 | 12.19 | 8.19 | 0.005 |
| Vulnerability to harm (VH) | 26.79 | 11.24 | 36.26 | 14.85 | 7.55 | 0.007 |
| Dependency (DI) | 25.09 | 11.77 | 34.02 | 14.06 | 6.77 | 0.011 |
| Self-sacrifice (SS) | 49.68 | 16.59 | 59.60 | 15.09 | 5.14 | 0.026 |
| Unrelenting standards (US) | 36.70 | 12.42 | 45.10 | 15.85 | 5.05 | 0.027 |
| Entitlement (ET) | 20.22 | 7.47 | 24.39 | 10.20 | 3.25 | 0.075 |
| Insufficient self-control (IS) | 30.54 | 12.83 | 37.18 | 13.77 | 2.97 | 0.089 |
| Enmeshment (EM) | 18.00 | 10.50 | 21.07 | 8.98 | 0.92 | 0.339 |

Abbreviations: PD = personality disorder, SD = standard deviation.

most of the of EMSs in patients with personality pathology. Enmeshment, Emotional deprivation and Entitlement did not differentiate patients with from patients without personality disorder diagnoses. In addition, these three EMSs were not related to psychological distress.

Hierarchical multiple regression analysis was used to determine whether the specific EMSs would predict symptomatic change. The dependent variable was the GSI post score and the predictors were entered in separate steps in the following order: step 1, age and sex; step 2, GSI pre-treatment score; step 3, pre–post change score of the various EMSs.

Table 3 show that the GSI post-treatment levels are reliably predicted by all of the specific EMSs when controlling for age, sex and GSI pre-treatment scores. The explained variance as expressed by the multiple $R^2$ shows the unique contribution of the change score of the specific EMSs, varying from about 5% for Emotional deprivation to 23% for Vulnerability to harm.

## DISCUSSION

This study investigated the relationship between early maladaptive schemas, symptomatic distress and personality traits in a pre–post comparative design. It was hypothesized that the levels of EMSs should be higher for patients with personality disorder compared with patients without PD, and that schema change would predict the patient's symptom relief after therapy.

First, we found a positive relationship between severity of EMSs and symptomatic distress, but in contrast there were, with one exception, no relationships between symptomatic distress and personality traits. Second, with a few exceptions, there were significant differences in the severity of EMSs for patients with a personality disorder diagnosis compared with patients with no personality diagnosis. Third, changes in all the specific EMSs seem to predict relief in general symptomatic distress (GSI post-treatment score).

These findings are in accordance with the results reported by Petrocelli and colleagues (2001), Schmidt et al. (1995) and Lee et al. (1999), who found a relationship between personality disorder characteristics and severity of the EMS. In our analyses we have controlled for the pre levels of symptomatic distress, which has not, to our knowledge, been previously done. The differences in mean scores of the EMS between axis I and axis II disorders are clear for 12 of the 15 EMS measured by the YSQ. This indicates that at least 12 of the EMSs may be considered a valid aspect of personality disorder.

The results in the present study show both an overall relationship to personality pathology but

 

Table 3. Hierachical regression analysis using level of symptomatic distress by the end of treatment as dependent variable. Predictors are age, sex (step 1), and level of symptoms prior to treatment (step 2), and pre–post change in each of the schemas was entered in the third step

| | GSI (post) | | | | |
|---|---|---|---|---|---|
| | Step | Beta | *t* | *p* | $R^2$ change |
| Age | 1 | 0.036 | 0.284 | 0.778 | |
| Sex | | 0.234 | 1.856 | 0.068 | |
| $R^2$ age/sex | | | | | 0.052 |
| GSI pre-treatment | 2 | 0.316 | 2.670 | 0.010 | 0.148 |
| Change in: | | | | | |
| Vulnerability to harm | 3 | 0.498 | 7.419 | 0.001 | 0.237 |
| Failure to achieve | 3 | 0.465 | 6.733 | 0.001 | 0.211 |
| Subjugation | 3 | 0.469 | 6.598 | 0.001 | 0.205 |
| Insufficient self-control | 3 | 0.450 | 6.440 | 0.001 | 0.199 |
| Unrelenting standards | 3 | 0.423 | 5.698 | 0.001 | 0.169 |
| Dependency | 3 | 0.399 | 5.366 | 0.001 | 0.155 |
| Self-sacrifice | 3 | 0.410 | 5.344 | 0.001 | 0.154 |
| Mistrust/abuse | 3 | 0.394 | 5.248 | 0.001 | 0.150 |
| Emotional inhibition | 3 | 0.381 | 5.104 | 0.001 | 0.144 |
| Social isolation | 3 | 0.377 | 4.958 | 0.001 | 0.138 |
| Abandonment | 3 | 0.374 | 4.892 | 0.001 | 0.135 |
| Defectiveness/shame | 3 | 0.368 | 4.739 | 0.001 | 0.129 |
| Entitlement | 3 | 0.301 | 3.800 | 0.001 | 0.090 |
| Enmeshment | 3 | 0.277 | 3.360 | 0.001 | 0.073 |
| Emotional deprivation | 3 | 0.230 | 2.756 | 0.007 | 0.051 |

Change = change in scores from pre treatment to post treatment. Method = enter.

also demonstrate a more specific profile of EMSs in various clusters of personality disorder. In particular, patients with paranoid, borderline and dependent traits have specific schemas related to disconnection and defectiveness, whereas obsessive and passive-aggressive patients show entitlement and insufficient self-control. However, schizotypal, schizoid and antisocial traits were not related to any of the specific EMSs or to symptomatic distress. Two possible explanations for these findings are the following. (1) The present sample was a sample of anxious and depressed patients with predominantly cluster C personality features. The selection of patients, typical of outpatients, in the study might bias the distribution of the EMSs. Patients with cluster A and cluster B personality pathology were probably lacking in the sample. (2) Personality disorders such as schizotypal, schizoid and antisocial may be better defined by their biological correlates and behavioural style, and to a lesser extent characterized by their cognitive content and profile as measured by the YSQ. Both of these explanations might apply.

Recently, some other studies have reported specific links between dysfunctional core beliefs as measured by the Personality Belief Questionnaire (PBQ) and some of the personality disorders (Kuyken, Kurzer, DeRubeis, Beck, & Brown, 2001; Beck et al., 2001; Arntz, Dietzel, & Dreessen, 1999; Butler, Brown, Beck, Grisham, 2002). Two studies have reported that assumptions or core beliefs about disconnection, dependency and abandonment are typical for patients with borderline personality disorder (Arntz et al., 1999; Butler et al., 2002), which are consistent with the findings in the present study. Thus, some empirical evidence for cognitive specificity of schemas or core beliefs for BPD are now emerging.

The findings of the present study should be viewed in light of some potential biases. First, the degree of specificity between the EMS and personality traits should be assessed in light of the present sample. The distribution of psychiatric diagnoses in our sample is typical of an outpatient sample (see Shea, Widiger, & Klein, 1992) and the relationship between the EMSs, schizoid, schizotypal and antisocial personality traits and symptomatic distress should not be generalized to other samples. Second, the present study used self-report in the assessment of the EMSs. The activation of the EMSs is often associated with painful emotions, which the patient may try to avoid. Often aware-

 

ness of the EMSs and the capacity to report them is facilitated when the patient is emotionally activated (Miranda & Persons, 1988; Miranda, Persons, & Byers, 1990). The schema theory predicts that various coping styles and compensatory strategies may bias the reporting of the EMS, and this is beyond the control of researchers. Methods other than self-report such as the Stroop task could be an alternative methodology for assessment of the EMSs in future studies (Segal & Vella, 1990). Third, it should be kept in mind that the relationships found in all the studies show only that there exists an interdependence between overall symptomatic change and schema change. Whether the symptomatic change is causal or whether schema change results in symptomatic relief remains to be established. However, in theory the EMSs are established as a part of the early personality of the child and thus may be considered a vulnerability factor for developing symptomatic distress and interpersonal difficulties. Fourth, the relatively small number of participants in the multiple regression analyses indicates that the results should be interpreted with caution. Fifth, multicollinearity could be a problem if pre and post levels of the GSI are highly correlated, which is usually undesirable for the regression analyses. In the present study the correlation coefficient was 0.63 between pre and post levels of GSI, which is moderate to high. However, according to Bryman and Cramer (1997) problems with multicollinearity will not seriously inflict the interpretation of the results until the correlation coefficient exceeds 0.80. However, the role of multicollinearity for the interpretation of the results should be considered.

To conclude, the present findings add some support to the ST model of personality disorder. The findings demonstrate that the early maladaptive schemas are correlated with general symptom distress and the presence of personality disorder in general, and more specifically to specific personality disorder traits. The results seem consistent with the main proposal of schema theory, that change in schemas is a contributor to resolving the patient's symptomatic distress. Thus, interventions aimed at modification of the schemas may be particularly important in decreasing the patient's symptomatic distress. The results provide some information about the prognostic validity of the Young Schema Questionnaire (1994) in an outpatient sample. The YSQ seems to be able to discriminate between patients with or without personality disorders and further to be able to predict symptomatic distress and outcome in outpatients. Hence, the Young Schema Questionnaire (YSQ; 1994) seems to be a clinically useful tool for both assessment and treatment of patients with personality disorders.

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