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Affective Styles in Panic Disorder and Specific Phobia: Changes Through Cognitive Behavior Therapy and Prediction of Remission

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Affective styles appear to be relevant to the development of psychopathology, especially anxiety disorders. The aim of the current study was to investigate changes in affective styles in patients with panic disorder and specific phobia, as a result of undergoing cognitive-behavioral therapy, and to identify a possible link between certain affective styles and remission. The sample consisted of outpatients ($N = 101$) suffering from panic disorder, specific phobia, or agoraphobia who completed the Affective Style Questionnaire (ASQ) before and after therapy, as well as at a 6-month follow-up assessment. Multivariate analyses of variance were conducted to test for changes due to therapy. Logistic regression analyses were calculated to test for the impact of affective styles on remission from anxiety disorders, and hierarchical regression analyses were calculated to examine the association between changes in affective styles and symptom reduction. Results indicated significant increases on the ASQ subscales adjusting and tolerating after therapy. Concealing did not decrease significantly after therapy. In addition, higher scores on adjusting significantly predicted remission from anxiety disorders. Finally, we found a significant association between increases on the adjusting scale and the reduction of anxiety symptoms.

Keywords: affective styles; panic disorder; specific phobia; Affective Style Questionnaire

FEELINGS OF ANGER TOWARD ce:smallaps]a friend or a partner, feelings of fear of a spider on the wall, or of sadness saying good-bye to someone—every human

being is confronted with the necessity to regulate such negative emotions on a daily basis. However, individuals vary widely, not only in the speed and in the intensity of emotional reactions to these kinds of environmental challenges, but also in the use of regulatory strategies to handle these emotions (Dennis, 2007). Whereas some people can easily tolerate feeling sad or anxious, others experience these emotions as intolerable and immediately engage in avoidance, concealment, or other maladaptive response-focused strategies (Gross & John, 2003). This broad range of individual sensitivity and responsiveness is referred to as *affective style* (Davidson, 1998, 2000, 2002; Hofmann, Sawyer, Fang, & Asnaani, 2012).

Emotion researchers have described several affective styles for regulating emotions (Hofmann & Kashdan, 2010; Hofmann et al., 2012; Mennin, Heimberg, Turk, & Fresco, 2002). So far, three main styles are commonly distinguished, based on Gross's (1998) process model of emotion regulation: concealing, adjusting, and tolerating (Hofmann et al., 2012). The *concealing style* includes suppression and other response-focused strategies aimed at concealing and avoiding emotions after they arise. The *adjusting style* encompasses the modulation of negative emotions as needed in a particular context by balancing and successfully readjusting emotional experience and expression as needed. The *tolerating style* refers to an accepting and nondefensive response to arousing emotional experiences as they exist in the present moment. This third style, including acceptance strategies, allows tolerance of strong emotions.

Individual affective style can be measured using the Affective Style Questionnaire (ASQ; Hofmann & Kashdan, 2010), a 20-item scale consisting of the three subscales that correspond to these affective styles. A clinical validation study of the ASQ suggests that affective styles play an important role in patients with mental disorders (Totzeck et al., 2018). Among patients with anxiety disorders, this study revealed that adjusting was negatively associated with depression, anxiety, and stress symptoms. This suggests that patients suffering from anxiety disorders have problems with successfully adapting to the situational demands in order to reduce fear, anxiety, or other negative emotions. Furthermore, concealing was found to be positively associated with depression, anxiety, and stress symptoms among patients suffering from anxiety disorders. In addition to avoiding emotions, concealing also involves hiding negative emotions in front of others. Because the sample in the previous study consisted of patients with a variety of anxiety disorders, it is unclear whether this is also

true for patients suffering from panic disorder or specific phobia. Tolerating appears to play a less important role: a negative association with anxiety symptoms was found only in patients suffering from mood disorders (Totzeck et al., 2018). These findings point to intriguing diagnostic differences in affective styles. Tolerating might play a more important role in panic disorder and agoraphobia, possibly due to the inability to tolerate the intense physical sensations associated with anxiety (Margraf & Schneider, 2009).

Although these affective styles are part of the processes targeted by modern cognitive-behavioral therapy (CBT; Ito & Hofmann, 2014), no study has specifically examined a resultant change of these three affective styles in patients suffering from anxiety disorders undergoing treatment. Moreover, so far, no study has been conducted to examine whether the three affective styles—concealing, adjusting, and tolerating—are substantially alterable in the first place. Previous studies have described the individual's affective style rather as a temperamental and trait-like variable (e.g., Davidson, 1992; Davidson & Tomarken, 1989; Wheeler, Davidson, & Tomarken, 1993). The present investigation addresses the paucity of research in this field by examining the variability of affective styles in relation to psychological treatment. Examining the short- and long-term effects of treatment on affective styles could lead to improved intervention strategies for anxiety disorders. As the goal of exposure exercises within CBT is the prevention of the manifestation of avoidant patterns (Abramowitz, Deacon, & Whiteside, 2011; Barlow et al., 2011; Craske, Treanor, Conway, Zbozinek, & Vervliet, 2014), allowing patients the experience of the entire range of emotional reactions, affective styles should be measurably influenced by treatment. Furthermore, CBT aims to reduce anxiety symptoms by preventing maladaptive concealing styles and by promoting more adaptive adjusting and tolerating styles (Ito & Hofmann, 2014). Whether this indeed does occur in an anxiety-disordered population undergoing CBT is examined in the present study.

When examining a possible change in affective styles through therapy, the question arises as to whether a specific affective style might also be associated with therapy outcome. So far, little is known about consistent predictive factors contributing to successful treatment outcomes in anxiety disorders. For instance, variables such as symptom severity, depressive symptoms, or anxiety sensitivity, in past research, have mostly led to inconsistent predictions of remission from panic disorder or agoraphobia (Porter & Chambless, 2015). The

results of the study by Porter and Chambless (2015), however, show that avoidance behavior assessed prior to therapy significantly predicts remission from panic disorder and agoraphobia after treatment termination. These findings might suggest that one's individual tendency to regulate negative emotions also contributes to treatment outcome. The further aims of the present study are, therefore, to explore the role of affective styles in the prediction of remission from anxiety disorders as well as to examine the association between a change in affective styles and reduction of anxiety symptoms.

In line with previous findings (e.g., Gross & John, 2003), a German ASQ validation study revealed that men tend to use the concealing style more often than women (Graser et al., 2012). In addition, results indicated significantly higher scores in men in adjusting and significantly higher scores in women in tolerating (Graser et al., 2012). The same gender differences were also found in the Belgian ASQ validation study using an adolescent population (Erreygers & Spooren, 2017). However, within the clinical population, the only gender effect was found in adjusting with male patients scoring higher than female patients (Totzeck et al., 2018). Based on these inconsistent findings, the present study also serves to explore possible gender differences in concealing, adjusting, and tolerating in patients suffering from anxiety disorders, and furthermore, whether these differences are affected by treatment.

Taken together, the paucity of research on affective styles and possible changes through CBT points to the need for more in-depth research. The present study is a partially exploratory examination with the following four hypotheses and questions: We predicted that (a) CBT increases the use of adjusting and tolerating, and decreases the use of concealing; (b) in addition, we aimed to investigate whether concealing, adjusting, and tolerating might predict a remission from anxiety disorders; (c) moreover, we aimed to examine whether a possible change in affective styles might be associated with a reduction of anxiety symptoms; and (d) last, we intended to explore gender differences in affective styles and whether these differences might change in the course of treatment.

Methods

The current study is a secondary analysis of a study on genetic factors in exposure treatments for panic disorder, agoraphobia, and specific phobia (Roberts et al., 2017). Treatments included in the current analysis were conducted between December 2011 and October 2015. All participants were recruited at our outpatient clinic in the Ruhr region in Germany. They were offered participation if they met the following criteria: (a) *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV; American Psychiatric Association, 2000) criteria for panic disorder with agoraphobia, agoraphobia without a history of panic disorder, specific phobia; (b) the anxiety disorder was considered to be the most severe disorder if comorbid disorders were present; (c) 18–70 years of age; (d) not meeting DSM-IV criteria for psychosis, mania, current substance abuse/dependency; (e) no concurrent psychological or psychopharmacological treatment; and (f) no suicide ideation/behavior in need of immediate treatment. Prior to treatment, participants gave written and informed consent. The study was approved by the Ethics Committee of the Faculty of Psychology at the Ruhr University Bochum.

PARTICIPANTS

A total of $n = 182$ outpatients (mean age: $M = 36.63$, $SD = 11.82$; 121 female [66.5%]) fulfilled inclusion criteria in the pretreatment assessment; $n = 145$ of them (mean age: $M = 36.93$, $SD = 12.24$; 99 female [68.3%]) completed therapy and took part in posttreatment assessment; and $n = 101$ (mean age: $M = 37.11$, $SD = 12.73$; 68 female [67.3%]) of these attended follow-up assessment. Since we were interested in long-term changes in affective styles, only patients with complete data sets including follow-up data were considered in the analysis. The current sample did not differ significantly from the full patient sample in age, $F(1, 281) = 0.01$, $p = .908$, distribution of gender, $F(1, 281) = 0.02$, $p = .886$, or diagnoses, $F(1, 281) = 0.18$, $p = .685$, nor in symptom severity, $F(1, 281) = 0.18$, $p = .672$, or ASQ scores (all p values $> .40$).

Age at baseline ranged from 19 to 65 years ($M = 37.11$, $SD = 12.73$), and 67.3% ($n = 68$) of the sample were female. At the pretreatment assessment, 57 patients (56.4%) suffered from panic disorder with agoraphobia, 5 (5.0%) from agoraphobia without history of panic disorder, and 39 (38.6%) from specific phobia, predominantly of the animal ($n = 11$; 10.9%) and environmental ($n = 10$; 9.9%) subtype. Thirty-five patients (33%) suffered from at least one comorbid diagnosis (see Table 1). The most common comorbid diagnosis was another specific phobia ($n = 19$; 18.8%) followed by social phobia ($n = 8$; 7.9%). Comorbid diagnoses ranged from a minimum of one ($n = 35$; 33%) to a maximum of three additional diagnoses ($n = 1$). This rather low comorbidity rate was in part due to the inclusion and exclusion criteria of the primary study on genetic factors in exposure treatment. All

Table 1
Primary and Comorbid Disorders at Pretherapy Assessment

	First diagnosis N (%)	Second diagnosis N (%)	Third diagnosis N (%)	Fourth diagnosis N (%)
Panic disorder with agoraphobia	57 (56.4)	1 (1.0)	-	-
Specific phobia	39 (38.6)	19 (18.8)	4 (4.0)	-
Agoraphobia	5 (5.0)	-	-	-
Social phobia	-	8 (7.9)	-	-
Major depressive disorder	-	3 (3.0)	4 (4.0)	1 (1.0)
Hypochondriasis	-	2 (2.0)	1 (1.0)	-
Panic disorder without agoraphobia	-	1 (1.0)	-	-
Bulimia nervosa	-	1 (1.0)	-	-
Insomnia	-	-	2 (2.0)	-
Generalized anxiety disorder	-	-	1 (1.0)	-
Dysthymia	-	-	1 (1.0)	-
Somatoform disorder	-	-	1 (1.0)	-
Posttraumatic stress disorder	-	-	-	-
Overall	101 (100)	35 (33.0)	14 (13.9)	1 (1.0)

Note. Comorbid diagnoses were not ordered by severity or impairment.

participants were Caucasian. Diagnoses were made by trained clinical psychologists with a master's degree using a structured diagnostic interview (see below) for mental disorders. The diagnostic interview was conducted at all three assessments, prior to and after therapy as well as during follow-up assessment. Posttherapy, $n = 68$ patients (67.3%) no longer met the criteria for primary anxiety disorder. $N = 40$ patients (70.2%) with panic disorder, $n = 26$ patients (66.7%) with specific phobia, and $n = 2$ patients (40.0%) with agoraphobia achieved remission. At follow-up assessment $n = 66$ of those patients (65.3%) retained remission ($n = 39$ patients (68.4%) with panic disorder, $n = 24$ patients (61.5%) with specific phobia, and $n = 3$ patients (60.0%) with agoraphobia.

TREATMENT

All patients received exposure-based treatment according to a treatment manual by Teismann and Margraf (2018), which is based on the treatment manual by Craske, Antony, and Barlow (2006). Whereas the treatment by Craske et al. (2006) is a 12-week program, the manual by Teismann and Margraf is delivered in the form of 25 weekly sessions. Because the health care insurance system in Germany allows 25 therapy sessions as short-term therapy, more therapist-guided exposure exercises were conducted here than in the treatment by Craske et al. (2006). Therapy was administered in one-to-one sessions that lasted 50 minutes ($M = 22.68$ sessions; $SD = 9.1$). Treatment included psychoeducation on the nature of anxiety as well as interoceptive and situational exposure exercises. All therapists were trained psychologists with a CBT orientation and had $M = 3.57$ years ($SD = 1.47$, range: 1–5 years) of experience in conducting CBT. All of them were trained in conducting exposure-based CBT for panic disorder, agoraphobia, and specific phobia prior to participating in the active phase of treatment. Furthermore, psychotherapists were supervised once weekly by a senior psychotherapist, to ensure treatment adherence. In order to provide supervision, all therapy sessions were videotaped.

MEASURES

Diagnostic Interview
Diagnoses were made using the Diagnostisches Interview bei Psychischen Störungen (DIPS; Schneider & Margraf, 2011), a structured clinical interview to assess mental disorders according to the criteria of the DSM-IV (American Psychiatric Association, 2000). The results of previous validation studies using the DIPS indicate high interrater reliability. According to Landis and Koch (1977), a coefficient score (Cohen's kappa coefficient [κ]) between .61 and .80 can be seen as "substantial agreement." The interrater reliability of the major diagnostic category of anxiety disorders (κ = .78), as well as the retest reliability coefficient scores (κ = .76 for anxiety disorders) are, therefore, both high (In-Albon et al., 2008; Suppiger et al., 2008). All assessments were videotaped; each diagnosis was made by a DIPS-certified psychotherapist and was also verified through supervising senior psychotherapists. Furthermore, the assessors of posttreatment and follow-up interviews were blinded.

Affective Style Questionnaire

The ASQ (Hofmann & Kashdan, 2010; German version: Graser et al., 2012) is a 20-item scale, measuring the three affective styles—concealing (e.g., "I often suppress my emotional reaction to things"), adjusting (e.g., "I know exactly what to do to get myself into a better mood"), and tolerating (e.g., "I can tolerate having strong emotions")—on 5-point Likert scales ranging from 1 (*not true of me at all*) to 5 (*extremely true of me*). The factor structure and validity of the ASQ have been examined in several different countries, including the United States (Hofmann & Kashdan, 2010), Germany (Graser et al., 2012; Totzeck et al., 2018), Japan (Ito & Hofmann, 2014), and Belgium (Erreygers & Spooren, 2017). The results of these studies supported the utility of the ASQ in healthy samples of the general population. In the clinical sample, the internal consistency values (Cronbach's alpha [α]) of the scores of the ASQ subscales were α = .82 for the concealing factor, α = .76 for the adjusting factor, and α = .71 for the tolerating factor (Totzeck et al., 2018). According to Nunnally (1978), a score of at least α = .70 can be seen as acceptable. In the current sample, the consistency value scores for the three subscales were α = .85 (concealing), α = .80 (adjusting), and α = .70 (tolerating).

Beck Anxiety Inventory

The Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988; German version: Margraf & Ehlers, 2007) is a 21-item scale, measuring the severity of symptoms (e.g., "heart pounding/racing" or "numbness or tingling") on a 4-point Likert scale ranging from 0 (*not at all)* to 3 (*severely—it bothered me a lot*). The German version of the BAI has just recently been shown to possess good psychometric properties (Geissner & Huetteroth, 2018). Consistency value score for the BAI was α = .94 in the current sample.

PROCEDURE

After signing informed consent, all patients were assessed by structured interview to determine the presence of primary anxiety disorder as well as to screen for comorbid and excluded psychiatric disorders. Before and after their therapeutic treatment as well as at follow-up assessment 6 months after therapy, all patients completed both the ASQ and BAI questionnaires.

Data Analysis

The Statistical Package for the Social Sciences (SPSS, version 24.0) was used to analyze the research data. In order to assess the psychotherapeutic effect on affective styles, multivariate analyses of variance (MANOVA) for repeated measures were computed: The three experimental times (Time 1 = pretherapy, Time 2 = posttherapy, Time 3 = follow-up assessment) served as independent within-subjects variables and the three ASQ subscales (concealing, adjusting, and tolerating) as dependent variables. In order to analyze gender differences, gender was added as a between-subjects factor in further analyses.

Homogeneity of error variances was tested using the Mauchly test for sphericity. In case of significant results of the Mauchly test, a Greenhouse-Geisser correction was conducted. The level of significance was set as $p < .05$ (two-tailed). Partial η^2 was calculated as an estimate of effect size. According to Cohen (1988, 1992) a partial η^2 of .01 can be viewed as small, .06 as medium, and .14 as large effect. As effect size for further pairwise comparisons, Cohen's d was calculated with d of 0.2 being a small, 0.5 being a medium, and 0.8 being a large effect.

In order to test for a possible link between affective styles and remission, logistic regression analyses with ASQ subscales as predictor variables and remission (yes/no) as criterion were calculated. Linearity of the logit assumption was tested; all interaction terms were not significant (all $p > .05$; Hosmer & Lemeshow, 1989). In addition to gender, we also took into account age and primary diagnosis, as well as anxiety levels (BAI scores) to control for other possible contributing factors. No violation of the multicollinearity assumption was found as all variance inflation factor (VIF) values were <5 (Urban & Mayerl, 2006).

Furthermore, two separate hierarchical regression analyses were conducted with gender, age, primary diagnosis, and BAI scores in Step 1 and the change scores of the three ASQ subscales (post-minus pretherapy assessment; follow-up minus posttherapy assessment) added in Step 2 to determine the association with symptom reduction (BAI scores post- minus pretherapy assessment; follow-up minus posttherapy assessment).

Results

CHANGES OF AFFECTIVE STYLES THROUGH TREATMENT

A significant multivariate effect of time on ASQ subscales, $F(2, 99) = 12.50, p < .001$; Wilks's λ = .798; $\eta_p^2 = .20$, was found. Significant changes of affective styles throughout treatment were found for *adjusting*, $F(2, 99) = 12.32, p < .001$; Wilks's λ = .801; $\eta_p^2 = .20$, and *tolerating*, $F(2, 99) = 12.98, p < .001$; Wilks's λ = .792; $\eta_p^2 = .21$, but not for *concealing*, $F(2, 99) = 0.65$, $p = .524$; Wilks's λ = .798; $\eta_p^2 = .01$. Further pairwise comparisons between pre- versus posttreatment and posttreatment versus follow-up assessment data were conducted. Results are presented in Table 2.

Table 2
Mean Differences, Standard Errors, and *P* Values of ASQ Subscale Changes Between Pre- and Posttherapy as Well as Between Posttherapy and Follow-Up Assessment

ASQ subscales	Time		Mean difference	Standard error	*p*	95% CI	Cohen's *d*
Concealing	1	2	.040	.047	1.000	[−.073, .154]	.05
	2	3	.011	.042	1.000	[−.092, .114]	-.01
Adjusting	1	2	-.255*	.059	<**.001**	[−.398, −.113]	**.33**
	2	3	-.034	.054	1.000	[−.165, .098]	.05
Tolerating	1	2	-.287*	.057	<**.001**	[−.425, −.149]	**.50**
	2	3	.051	.045	.770	[−.058, .160]	.02

Note: ASQ = Affective Style Questionnaire; Time 1 = pretherapy assessment; Time 2 = posttherapy assessment; Time 3 = follow-up assessment; CI = confidence interval.

Adjusting ($p < .001$, $d = .33$) and tolerating ($p < .001$, $d = .50$) both significantly increased from pre- to posttherapy. No further changes in adjusting and tolerating between posttherapy and follow-up assessment were found (all p values $> .58$). Concealing did not decrease significantly in either the pre- versus posttherapy or the posttherapy versus follow-up comparison (both $p = 1.0$).

PREDICTION OF REMISSION FROM ANXIETY DISORDERS

The results of the two logistic regression analyses are shown in Table 3. Neither gender, age, diagnosis, pretherapy BAI score, nor concealing or tolerating predicted posttherapy remission. The only significant effect was found for adjusting ($p = .043$): A higher pretherapy adjusting score significantly predicted remission from anxiety disorders posttherapy.

The only significant prediction of follow-up remission was found for posttherapy BAI score ($p = .048$): A lower BAI score at posttherapy assessment significantly predicted remission from anxiety disorders at the follow-up assessment 6 months after treatment. None of the other posttherapy scores served as significant predictors of remission (all p values $> .16$).

ASSOCIATIONS OF THE CHANGES IN AFFECTIVE STYLES WITH REDUCTION OF ANXIETY SYMPTOMS

The first hierarchical regression analysis revealed that at Step 1, the baseline BAI score contributed significantly to the reduction of BAI scores, $F(4, 95) = 37.97$, $p < .001$, and accounted for 60% of the variation in anxiety symptom reduction. Introducing the change scores of the three ASQ variables at Step 2 explained an additional 7% of variation in anxiety symptom reduction and this change in R^2 was significant, $F(7, 92) = 23.45$, $p < .001$. The results are presented in Table 4a.

The results of the second hierarchical regression analysis are presented in Table 4b. They showed that at Step 1, the BAI score at posttherapy assessment contributed significantly to the reduction of BAI scores at follow-up, $F(4, 94) = 16.81$, $p = .047$), and accounted for 40% of the variation in anxiety symptom reduction. Introducing the change scores of the three ASQ variables at Step 2 did not explain additional variation in anxiety symptom reduction (all p values $> .05$).

GENDER DIFFERENCES IN THE THREE AFFECTIVE STYLES

A significant interaction between *gender* and the ASQ *subscales* was found, $F(2, 98) = 3.64$, $p = .030$

Table 3
Results of the Logistic Regression Analyses Pre- to Posttherapy and Posttherapy to Follow-Up

	Pre- to posttherapy				Posttherapy to follow-up			
	Regression coefficient (β)	*p*	OR	95% CI	Regression coefficient (β)	*p*	OR	95% CI
Gender	.173	.733	1.189	[.440, 3.215]	.008	.988	1.008	[.356, 2.850]
Age	-.016	.399	.985	[.950, 1.021]	.005	.786	1.005	[.968, 1.044]
Diagnosis	.002	.983	1.002	[.871, 1.151]	-.040	.531	.961	[.850, 1.088]
BAI	-.011	.628	.989	[.948, 1.033]	-.059	**.048**	.942	[.889, .999]
ASQ concealing	.055	.865	1.056	[.561, 1.987]	.380	.268	1.462	[.746, 2.864]
ASQ adjusting	.813	**.043**	2.254	[1.025, 4.953]	.519	.160	1.680	[.815, 3.463]
ASQ tolerating	-.519	.299	.595	[.224, 1.585]	.388	.501	1.474	[.477, 4.555]

Note. OR = odds ratio; CI = confidence interval; BAI = Beck Anxiety Inventory; ASQ = Affective Style Questionnaire.

Table 4a
Results of the Hierarchical Regression Analysis for Pre- to Posttherapy Changes

	β	t	p	R^2	Adjusted R^2
Step 1					
Gender	-.13	-1.95	.059	.615	.599
Age	-.00	-.03	.975		
Diagnosis	.04	.52	.603		
BAI	-.75	-10.38	<**.001**		
Step 2					
Gender	-.17	-1.81	.074	.681	.674
Age	-.02	-.33	.744		
Diagnosis	.05	.63	.530		
BAI	-.69	-9.37	<**.001**		
Change in concealing	-.08	-1.28	.204		
Change in adjusting	.15	2.15	**.034**		
Change in tolerating	-.02	-.26	.795		

Note. Dependent variable: change score BAI = Beck Anxiety Inventory.

(η_p^2 = .07). The results of further pairwise comparisons revealed a significant difference between female and male patients in concealing at all three assessments, in that male patients scored significantly higher than female patients. No significant difference was found in adjusting or tolerating (all *p* values > .06). The results are presented in Table 5.

Discussion

The main purposes of the present study were to investigate whether the three affective styles—concealing, adjusting, and tolerating—change over time in patients suffering from anxiety disorders and undergoing CBT, and whether specific affective styles can predict remission from disorders. With two thirds of the treated patients showing a full remission from anxiety disorders after therapy, the rates are slightly higher than the overall remission rate of CBT studies on anxiety disorders (53% for completers at posttreatment; see the meta-analysis by Springer, Levy, & Tolin, 2018). The remission was mostly stable throughout follow-up assessment 6 months after therapy, except for two patients showing relapses.

We initially hypothesized that CBT would increase the use of adjusting and tolerating and decrease the use of concealing. Although our results did not reveal a significant decrease in concealing, both of the other affective styles increased significantly according to our hypotheses. These findings are partly in line with our predictions and reveal that therapy appears to change the individual affective styles. Both adjusting and tolerating increased after therapy in patients suffering from panic disorder, agoraphobia, and specific phobia. Since psychophysiological and cognitive models

Table 4b
Results of the Hierarchical Regression Analysis for Posttherapy to Follow-Up Changes

	β	t	p	R^2	Adjusted R^2
Step 1					
Gender	.03	.35	.723	.428	.417
Age	-.05	-.60	.547		
Diagnosis	-.09	-.95	.345		
BAI	-.68	-7.37	<**.001**		
Step 2					
Gender	.01	.13	.896	.447	.418
Age	-.03	-.41	.686		
Diagnosis	.11	1.16	.249		
BAI	-.64	-6.90	<**.001**		
Change in concealing	.09	1.07	.285		
Change in adjusting	-.16	-1.83	.070		
Change in tolerating	-.02	-.27	.790		

Note. Dependent variable: change score BAI = Beck Anxiety Inventory.

Table 5
Gender Differences in the ASQ Subscales Pre- and Posttherapy as Well as During Follow-Up Assessment

Time	Subscales	Gender	Mean score	Standard error	p	ηp^2
Pretherapy						
	Concealing	Women	2.73	.088	**.004**	.08
		Men	3.17	.126		
	Adjusting	Women	2.75	.091	.232	.01
		Men	2.94	.131		
	Tolerating	Women	3.23	.072	.775	.00
		Men	3.19	.103		
Posttherapy						
	Concealing	Women	2.70	.084	**.006**	.07
		Men	3.11	.121		
	Adjusting	Women	2.96	.094	.064	.03
		Men	3.27	.135		
	Tolerating	Women	3.49	.063	.820	.00
		Men	3.52	.090		
Follow-up						
	Concealing	Women	2.69	.083	**.007**	.07
		Men	3.09	.119		
	Adjusting	Women	3.05	.085	.345	.00
		Men	3.19	.122		
	Tolerating	Women	3.46	.062	.704	.00
		Men	3.42	.089		

posit exaggerated appraisal of threat being a core element underlying pathological anxiety (Beck & Haigh, 2014; Clark & Beck, 2010; Margraf & Ehlers, 1989), it is reasonable to expect that a successful treatment should be closely linked to improved adjusting in response to situational demands. Analogue to the improved adjusting, a strengthened ability to tolerate fear, anxiety, and other negative emotions should be, though not always directly addressed, one of the goals of exposure exercises. The increase of tolerating after therapy found in this study fits into this assumption.

Our results did not reveal a significant decrease of concealing after therapy. This result is in contrast to our hypothesis, as we have expected that the rather maladaptive concealing tendency would decrease through therapy. However, the effect of concealing might be less relevant in patients suffering from panic disorder, agoraphobia, or specific phobia. Since the ASQ subscale concealing not only implies suppressing negative emotions (e.g., "I often suppress my emotional reactions to things") but also hiding negative emotions in front of others (e.g., "People usually can't tell how I am feeling inside"), concealing might play a more important role in social anxiety disorders, where patients aim to hide negative emotions in social contexts (Hofmann, 2007). This assumption should be addressed in further research.

We did not find any changes in affective styles between posttherapy and follow-up assessment, which suggests that affective styles are relatively stable individual traits. The development of the ASQ was to some extent based on the studies on emotion regulation by Gross and colleagues (e.g., Gross & John, 1997, 2003), showing convergent validity with the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003), which is a state measure (see Hofmann & Kashdan, 2010). Habitual affective styles, especially adjusting, appear to be more associated with psychopathology than situation-specific and state-dependent emotion regulation strategies (Totzeck et al., 2018). Future research should further examine the role of habitual affective styles and situation-specific emotion regulation strategies in psychopathology and treatment.

In addition, we aimed to investigate whether concealing, adjusting, and tolerating might predict remission from anxiety disorders. For prediction of remission, neither concealing nor tolerating seemed to play an important role, overall. However, we did find that the adjusting style assessed prior to therapy appeared to be a significant predictor of remission from anxiety disorders after therapy. The ability to adjust to situational demands in order to handle negative emotions (e.g., "I can get out of a bad mood very quickly"), therefore, seems to contribute to successful treatment outcome. This

ability could impact the compliance of patients and consequently their motivation, their own expectation to succeed, or simply reveal a higher flexibility to change cognitions and behavior. The same prediction from therapy termination to follow-up assessment, wherein only the BAI score served as predictor, was not found.

We, furthermore, aimed to examine whether a possible change in affective styles might be associated with a reduction of anxiety symptoms. In addition to the important role of the symptom severity as assessed with the BAI score, our results also suggest that those patients, who were able to increase their adjusting to a greater extent, benefited more from therapy and experienced greater symptom reduction. Contrary to this result, an increase in adjusting was not associated with a reduction of anxiety symptoms at follow-up assessment 6 months after treatment termination. Unfortunately, these results do not enable further conclusions about the potential cause–effect relationship. However, the exact role of adjusting for treatment success should be investigated in further therapy studies, which should also assess whether these effects might be different in other forms of treatment. For instance, it might be interesting to examine whether mindfulness-based or acceptance and commitment therapy (ACT) causes a greater increase of tolerating than traditional CBT.

Finally, we aimed to investigate gender differences in affective styles and, furthermore, whether these differences might change in the course of treatment. In contrast to previous findings (Erreygers & Spooren, 2017; Graser et al., 2012), we did not find gender differences on all three of the affective styles. The only significant difference was found for concealing, where male patients scored higher than female patients. This difference was invariant throughout all three assessments, prior and after therapy, as well as at assessment 6 months after therapy. Neither of the other affective styles differed between female and male patients at any assessment. It is, therefore, assumable that psychopathology, especially anxiety disorders, might mitigate gender differences in affective styles. Conceivably, the intensity of emotions perceived by patients with anxiety disorders might contribute to this effect. Whereas in healthy populations, men and male adolescents tend to use adjusting more often than women and female adolescents (Erreygers & Spooren, 2017; Graser et al., 2012), in an anxiety-disordered population, this difference does not appear. Further, female patients suffering from anxiety disorders do not use tolerating more often than male patients, although this effect has been found in healthy populations (Erreygers &

Spooren, 2017; Graser et al., 2012). In order to interpret these inconsistent findings, cutoff scores of the ASQ subscales would be a helpful addition to a future study. Unfortunately, cutoff scores for the three affective styles have not been gathered to date. However, on the descriptive level, our patients' sample shows smaller mean scores compared to the healthy German population (Graser et al., 2012), even after therapy. Since other factors, such as age or educational background, might play an important role, further research should address these questions. An examination of differences in affective styles in psychotherapy patients, as compared to a healthy population, might help investigators to further understand not only the gender differences but also the adaptive and maladaptive functioning of affective styles. Interestingly, on the descriptive level, our patients' sample scores higher in adjusting and tolerating and lower in concealing than the previously investigated patients' sample with anxiety disorders (Totzeck et al., 2018). Further research is needed to clarify whether this might be due to the form of anxiety disorder or other factors, such as the symptom severity.

In conclusion, despite the inherent relationship between anxiety disorders and emotion regulation deficits, there is a relative lack of studies examining the effects of treatment on affective styles within clinical samples of anxiety disorders. To our knowledge, this is the first study exploring changes in the three affective styles of concealing, adjusting, and tolerating in patients undergoing CBT, overall. Since this body of research is quite new, more data will be needed to determine the ultimate utility of incorporating functional and dysfunctional affective styles into theories of anxiety disorders.

LIMITATIONS

The following limitations must be taken into consideration while evaluating the present study. First of all, we did not have a control group in this study. This, unfortunately, prohibits further comparisons between changes in affective styles in people who are and are not undergoing treatment. Second, our patient sample was based on panic disorder, agoraphobia, and specific phobia and was, therefore, quite homogeneous. Because we did not include other forms of anxiety disorders, our results cannot be generalized. This limitation is underlined by the fact that the comorbid depressive disorder rate as well as the range of other disorders, such as generalized anxiety disorder, were rather low. This might be due to the fact that the patients were recruited for the primary study on genetic factors in exposure treatments. Furthermore, we excluded patients with concurrent psychopharmacological

treatment. Further studies will be needed to test for effects in other forms of anxiety disorders and also in samples with higher comorbidity of depressive and other disorders. Additionally, the results should be interpreted with caution because no adjustments of the family-wise error rate were conducted. Third, we did not ascertain the past treatment history in detail. This might also be a contributing factor, because patients with a treatment history might have already increased their ability to adjust or tolerate due to previous interventions. Fourth, we did not implement a midtherapy assessment. Future research should address these questions in order to examine a possible mediating role of affective styles on therapy outcome. Furthermore, this could also help to examine whether those patients who do not complete treatment are individuals who have more difficulties modifying their affective styles. Fifth, the lack of gender differences in adjusting and tolerating might also be due to low statistical test power. The conducted power analyses resulted in adequate power for the main associations, except for the analysis of gender effects. Further therapy studies with greater sample sizes, and especially more male patients, should investigate possible gender differences. Last, we did not assess treatment adherence psychometrically. This is also a limiting factor with regard to the interpretation of therapeutic effects on changes of affective styles through treatment.

CONCLUSIONS

The findings of the present study emphasize the interaction between affective styles and anxiety disorders. Furthermore, examining changes in affective styles due to CBT might provide a new approach to identifying and understanding behavior patterns of patients suffering from anxiety disorders and to gain insight into the effects of CBT. This might also help to optimize both the understanding of emotion regulation as well as the psychotherapeutic treatment for patients suffering from anxiety disorders. Finally, it might also be interesting to investigate the effect of directly addressing affective styles in therapy and the impact on therapy outcome.

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