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**Fear of anger and its relation with anxiety- and depressive
symptoms**

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Abstract. The aim of this study was to investigate the relation between fear of anger and anxiety and depressive symptoms. Two samples; one clinical, consisting of patients with various anxiety disorders and depression ($n = 22$) and one student sample ($n = 198$) were included in the study. Results showed that fear of anger is positively related with anxiety- and depressive symptoms and that change in fear of anger predicts change in anxiety- and depressive symptoms over time among students. However, there was no significant difference in fear of anger between the patients and the student sample, indicating that fear of anger may be more of a general psychological process than a distinctive feature of anxiety disorders and depression.

The efficacy of Cognitive-behavioral therapy (CBT) has been established through numerous randomized controlled trials (Hoffman & Smits, 2008). Although proved effective, there is still considerable room for improvements since a significant proportion of treatment seekers do not respond to therapy or relapse after treatment has ended (Arch & Craske, 2009). One possible way to improve CBT is nowadays seen in the growing interest of emotion-focused models within the CBT-framework (for an overview see Thoma & McKay, 2015). Previous research has shown that people with anxiety disorders and depression experience more frequent and intense negative emotions than healthy individuals and that they also tend to experience these emotions as more intolerable and uncontrollable (Barlow, Sauer-zavala, Carl, Bullis, & Ellard, 2014). In particular, fear of losing control over strong emotions, has over the years gained increased research interest in the treatment of anxiety disorder and depression (Berg, Shapiro, Chambless, Ahrens, 1998; Melka, Lancaster, Bryant, Rodriguez & Weston, 2011; Mennin, Heimberg, Turk, & Fresco, 2005; Williams, Chambless, & Ahrens 1997;). Much of this research has focused on the fear of losing control over anxiety (so called anxiety sensitivity, see for example Naragon-Gainey, 2010) but recently it has been suggested that fear of losing control over anger may also play a prominent role in the maintenance and development of anxiety disorders and depression (Cassiello-Robbins & Barlow, 2016)

Cassiello-Robbins and Barlow (2016) recently concluded that anger is an important but unrecognized emotion in the treatment of anxiety disorders and depression. When encountering stimuli that people with anxiety disorders perceive as being dangerous, the fight-or-flight fear response may activate and anger has therefore been suggested to play a prominent role in these disorders. Many studies have examined the role of the flight component of the fight-or-flight fear response in patients with anxiety disorders, in regard to behavioral responses such as escape, avoidance and safety behaviors, but much less focus has been made on the possible manifestation of the fight response such as experienced and/or expressed anger in this population

(Moscovitch, McCabe, Antony, Rocca, & Swinson, 2008). Anger is similar to anxiety and fear, in the sense that anger is a high arousal and negative valence emotion. But whereas anxiety and fear are related to withdrawal motivation, studies have demonstrated anger to be related to approach motivation (for an overview see Carver & Harmon-Jones, 2009). Anger and anxiety has thus been suggested to be related to different ways of responding to a threatful situation (Anderson, Deschênes, & Dugas, 2016) and has recently been understood to reflect two different manifestations of the fight-or-flight fear response (Cassiello-Robbins & Barlow, 2016).

In recent years two big population based studies have demonstrated a relationship between anger and various anxiety disorders and depression (Barrett, Mills, & Teesson, 2016; Hawkins & Cogle, 2011). In these studies both the experience of anger and the expression of anger has been measured to distinguish between the subjective feeling of anger and the verbal or physical manifestation of the feeling. In the study by Hawkins & Cogle (2011), a unique relationship with various anxiety disorders and anger experience and expression was established that were not better accounted for by other comorbid disorders. Similar results were obtained in the population study by Barrett et al. (2016), where various anxiety disorders, depression and anger symptoms were assessed. Results showed that there was a disorder specific association between anger experience and multiple anxiety disorders as well as depression that were independently significant after controlling for comorbidity. In order to understand how widespread anger is in the general clinical population, Posternak & Zimmerman (2002) studied 1300 individuals within a psychiatric outpatient practice and found that one half of the sample reported experiencing moderate-to-severe levels of anger. Building on these results Posternak & Zimmerman (2002) concluded that anger might be as prominent among psychiatric outpatients as anxiety and depression.

Although the majority of research concerning anger in the anxiety disorders has been disorder specific (for an overview see Cassiello-Robbins & Barlow 2016) the general picture is that people with anxiety disorders experience more anger than healthy individuals and that they in the same time show lower levels of anger expression (Moscovitch et al., 2008; Koh, Kim, Kim, Park, & Han, 2008). As patients with anxiety disorders and depression are more prone to use suppression as a way to deal with negative emotions than healthy individuals (Campbell-Sills, Barlow, Brown, & Hofmann, 2006), Koh et al., (2008) have showed that they also tend to manage anger with suppression, an emotion regulation strategy which has been associated with lower positive affect and an paradoxical increase in negative affect (Gross & John, 2003). Given the evidence that anger experience is elevated among patients with anxiety disorders and that fear of strong emotions has been linked to anxiety disorders and depression, this study aims to investigate if fear of anger is a central feature among patients with anxiety disorders and depression. Although the relationship between anger and anxiety disorders and depression has been well documented, there is still a lack of studies that have investigated how fear of anger may be related to anxiety- and depressive symptoms. In a study by Sauer-Zavala, Boswell, Gallagher, Bentley, Ametaj, & Barlow (2012) fear of losing control over anxiety symptoms (anxiety sensitivity) as well as fear of losing control over strong emotions in general (affective control) were shown to be more strongly related to change in anxiety- and depressive symptoms

during CBT than the frequency of the negative emotions itself. Building on these results this study aims to investigate how fear of anger may be related to anxiety- and depressive symptoms.

In this study, three central research questions are asked: (1) Is fear of anger elevated among patients with anxiety disorders and depression compared to a student sample? (2) Is fear of anger related to anxiety- and depressive symptoms? (3) Is change in fear of anger related to change in anxiety- and depressive symptoms over time?

Methods

Participants

Participants in this study were recruited from two different samples. 22 participants were recruited from a pool of individuals seeking treatment at the psychiatric outpatient clinic WeMind in Gothenburg, Sweden and 198 participants were recruited from a student population at Gothenburg University and Chalmers University of technology.

Among the patients seeking treatment at WeMind, 12 were males and 10 were females with a mean age of 33.36 years ($SD = 9.95$, range 19-60 years). Inclusion criteria were a diagnosis of any anxiety disorder or depression and age 18 years or older. A total of 22 patients started Cognitive-behavioral therapy for anxiety disorders or depression at WeMind and were included in this study. Diagnoses included: generalized anxiety disorder (GAD, $n = 17$), major depressive disorder (DEP, $n = 13$), social anxiety disorder (SOC, $n = 10$), panic disorder with or without agoraphobia (PDA, $n = 8$), obsessive compulsive disorder (OCD, $n = 5$) and post-traumatic stress disorder (PTSD, $n = 1$). Participants had an average of 2.5 diagnoses before treatment ($SD = 1.06$, range 1-4 diagnoses).

Among the student sample, 76 were males and 119 were females (3 students did not report their gender) with a mean age of 23.98 years ($SD: 5.41$, range 19-59 years). Inclusion criterion was 18 years or older. The students were recruited from Gothenburg University ($n = 127$) and Chalmers University of technology ($n = 71$). The students from Gothenburg University came from the faculty of social sciences ($n = 87$), the Sahlgrenska academy of medicine ($n = 26$) and the faculty of arts ($n = 14$). At the start of this study 11.1% of the students reported an ongoing contact with a health care professional and 4.5% underwent treatment at a psychiatric outpatient clinic. 30, 3 % of the students reported that they at some time in their life had been in contact with a psychiatric practice due to own mental health concerns.

Treatments

The psychological treatments that were provided for the patients at WeMind have all been supported by a scientific board consisting of researchers in clinical

psychology¹. The purpose of this scientific board at WeMind is to evaluate present psychiatric research in order to ensure scientifically supported psychological treatments. At the time of this study the psychological treatments at WeMind were the following: for GAD, Intolerance of uncertainty therapy (Dugas, 2007); for SOC, Clark's Cognitive behavioral therapy for social anxiety (Clark, 1997); for PDA, Panic control treatment (Barlow, 2014); for PTSD, Prolonged exposure therapy (Foa, Hembree & Rothbaum, 2007); for OCD, Exposure and Response Prevention (Foa, 2012); and for DEP, Behavioral activation (Martell, Dimidjian & Herman-Dunn, 2010)

In treatment of patients with comorbid disorders the routine procedure at WeMind is to treat one diagnosis at a time and that the patient in discussion with the therapist decides which diagnoses to treat first with appropriate Cognitive-Behavioral therapy. This was also the procedure during this study.

Measures

Fear of Anger. Fear of anger was assessed using the Anger subscale of the Affective control scale which is a 8-item self-report measure that assess fear of anger and specially fear of losing control during the experience of anger (ACS-Anger; Williams, Chambless & Ahrens, 1997). A total score is derived using the average of all items (Scale of 1 [Very Strongly Disagree] to 7 [Very Strongly Agree]) with higher scores indicating greater fear of anger. Example items include: "I am concerned that I will say things I'll regret when I get angry" and "I am afraid that letting myself feel really angry about something could lead me into an unending rage". The anger subscale of the Affective control scale has demonstrated acceptable reliability (Melka et al., 2011) and good ecological validity with higher scores predicting greater daily experience of anger (Hughes, 2015). In order to use the ACS-Anger on a Swedish population the subscale was translated into Swedish using a back translation procedure involving a bilingual psychologist (Bracken & Barona, 1991).

Anxiety sensitivity. Anxiety sensitivity was assessed using the Anxiety sensitivity index-3, which is a 18-item self-report measure that assess beliefs about the dangerousness of anxiety symptoms and the resulting fear of these symptoms (ASI-3; Taylor et al., 2007). The ASI-3 is composed of three 6-item subscales: physical, cognitive and social concerns. A total score of ASI-3 is derived from the sum of the three subscales (Scale of 0 [Very little] to 4 [Very Strongly Agree]) with higher scores indicating greater anxiety sensitivity. Example items include: "When I feel pain in my chest, I worry that I'm going to have a heart attack" and "When my thoughts seem to speed up, I worry that I might be going crazy". The ASI-3 has demonstrated good internal consistency on each subscale and criterion-related validity (Taylor et al., 2007). In order to use the ASI-3 on a Swedish population the subscale was translated into Swedish using a back translation procedure involving a bilingual psychologist (Bracken & Barona, 1991).

Anxiety symptoms. Anxiety symptoms were assessed using the Generalized

¹ See <http://www.wemind.se/om-oss/weminds-vetenskapliga-råd-23677131> for more information about the scientific board at WeMind.

Anxiety Disorder Questionnaire, which is a 7 item self-report measure that is widely used for assessing anxiety symptom severity (GAD-7; Spitzer, Kroenke, Williams & Löwe, 2006). The GAD-7 is constructed to assess how often during the last two weeks the subject has experienced each anxiety symptom related to generalized anxiety disorder, and has been shown to be a good measure of global anxiety symptoms in a heterogeneous psychiatric sample (Beard & Björgvinsson, 2014). A total score of GAD-7 is derived from the sum of the seven items (Scale of 0 [not at all] to 4 [nearly every day]) with higher scores indicating higher levels of anxiety severity. Example items include: “Over the last 2 weeks, how often have you been bothered by worrying too much about different things?” and “Over the last 2 weeks, how often have you been bothered by feeling afraid as if something awful might happen?”. The GAD-7 has demonstrated excellent internal consistency and good convergent validity (Spitzer, Kroenke, Williams & Löwe, 2006).

Depressive symptoms. Depressive symptoms were assessed using the Patient Health Questionnaire, which is a 9-item self-report measure that is widely used for assessing severity of depression (PHQ-9; Kroenke, Spitzer & Williams, 2001). Each of the nine items in the PHQ-9 corresponds to one of the Diagnostic criterion A symptoms for major depressive disorder in DSM-IV and are constructed to assess how often during the last two weeks the subject has experienced each depressive symptoms. A total score of PHQ-9 is derived from the sum of the nine items (Scale of 0 [not at all] to 4 [nearly every day]) with higher scores indicating higher levels of depression severity. Example items include: “Over the last 2 weeks, how often have you been bothered by feeling down, depressed, or hopeless?” and “Over the last 2 weeks, how often have you been bothered by feeling tired or having little energy?”. The PHQ-9 has demonstrated good reliability and criterion-related validity (Kroenke, Spitzer, Williams & Löwe, 2010) and has shown to be a good measure of depressive symptoms in general.

Diagnosis. Baseline diagnoses were assessed among the patients at WeMind during an initial assessment by mental health professionals using the Mini International Neuropsychiatric Interview (M.I.N.I.; Sheehan et al., 1998). M.I.N.I. is a structured diagnostic interview that assesses 17 psychiatric disorders including anxiety disorders and depression in accordance with DSM-5 and has demonstrated acceptable validity and reliability (Sheehan et al., 1997).

Student Questionnaire. Descriptive data about the students were attained by a student questionnaire that was constructed for the purpose of this study. In the student questionnaire the students were asked to report their gender and age at the beginning of the study. All students were also asked in the start of the study whether they had an ongoing contact with a health care professional due to own mental health concerns, if they had an ongoing contact with a psychiatric outpatient practice due to own mental health concerns and if they ever had been in contact with a psychiatric practice due to own mental health concerns. To control for, whether any students who participated in the study started therapy during their participation, the students were also asked after the study to report if they have had any contact with a mental health professional for treatment of own mental health concerns during the time of the study.

Procedures

All patients that applied for medical or psychological treatment at WeMind from May until November 2016 were given the opportunity to participate in this study. During the initial assessment at WeMind a mental health professional provided necessary information about this study both verbally and on paper in order for the patients to provide informed consent. Information that might reasonably influence willingness to participate were presented such as the purpose of this study, procedures, expected duration, right to withdraw from the study and all patients were assured that neither participation nor non-participation would affect their treatment at WeMind. After inclusion criteria were confirmed and diagnoses were established during the initial assessment, the patients were offered either medical or psychological treatment. 22 patients started psychological treatment at WeMind for an anxiety disorder or depression during this period and did then receive ACS-Anger, ASI-3, GAD-7 and PHQ-9 at pre- under- and post-treatment. Each patient was given the four self-reports measures once a month during their Cognitive-Behavioral therapy by using Questlink, an online questionnaire platform at WeMind. The patient data for this study was collected between the 30th of June and the 15th of November 2016. Due to lack of completed data from under- and post treatment at the time of this publication (only one patient had at the time finished their Cognitive-Behavioral therapy at WeMind) only pre-treatment data are presented in this paper.

The same four self-reports (ACS-Anger, ASI-3, PHQ-9 and GAD-7) were also given to the student sample. The students completed the four self-reports during five occasions with one month between every measure point in order to mimic the time lead of the patient sample. The students completed their self-reports using Qualtrics, an online questionnaire platform that allowed them to fill in their self-reports by email. Before participation, information that might reasonably influence willingness to participate such as the purpose of this study, procedures, expected duration, and right to withdraw from the study was presented for all students, both verbally and on paper. The students completed the self-reports at five occasions between the 26th of May and the 25th of September 2016.

Results

In order to examine fear of anger and its relation to psychological symptoms, mean scores for fear of anger, anxiety sensitivity as well as anxiety- and depressive symptoms were first created at study start both in the student- and patient sample. Descriptive results can be seen in Table 1. On a descriptive level, higher levels of anxiety sensitivity, anxiety- and depressive symptoms were seen at pre-treatment in the psychiatric outpatient group than in the students while fear of anger were slightly higher in the student group. Estimates of skewness and kurtosis (between -3 and 3) indicate that the variables were reasonably normally distributed. To examine the differences between the student- and patient sample at study start, independent t-tests were used to compare the mean scores between the samples among the four variables. Results showed that the patient sample had significantly higher mean scores for anxiety sensitivity, $t(23.33) = 3.72, p = .01$, anxiety symptoms, $t(24.02) = 2.94, p = .01$, and

depressive symptoms, $t(217) = 4.18, p = .01$, however in regard to fear of anger there were no significant difference, $t(217) = -1.39, p = .17$.

Table 1

Mean scores at study start and measures of skewness and kurtosis

	Student sample ($n = 198$)				Patient sample ($n = 22$)			
	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Fear of anger (ACS-Anger)	25.17	8.42	0.88	0.70	22.59	6.74	0.95	0.12
Anxiety sensitivity (ASI-3)	13.49	10.76	1.43	2.39	26.09	15.46	0.27	-0.55
Anxiety symptoms (GAD-7)	5.91	4.37	0.92	0.53	9.50	5.54	-0.01	-0.97
Depressive symptoms (PHQ-9)	5.93	4.66	1.09	1.06	10.36	5.25	0.11	-0.86

Based on the scores at study start, correlational analyses were then used to examine the relationship between fear of anger and anxiety sensitivity in regard to anxiety- and depressive symptoms. Results can be seen in Table 2. All correlations were in the expected direction. Both fear of anger and anxiety sensitivity were positively correlated with levels of anxiety and depression in the student- and patient sample (r 's: .34 - .59) indicating moderate to large correlations (Cohen, 1988). In the student sample all the correlations were significant ($p < .01$) while in the patient sample no correlations were significant at the .05 level except for the correlation between anxiety sensitivity and anxiety symptoms ($p < .05$).

Table 2

Fear of anger and anxiety sensitivity correlated with anxiety- and depressive symptoms at study start

	Student sample		Patient sample	
	Anxiety symptoms (GAD-7)	Depressive symptoms (PHQ-9)	Anxiety symptoms (GAD-7)	Depressive symptoms (PHQ-9)
Fear of anger (ACS-anger)	.44 **	.45 **	.34	.38
Anxiety sensitivity (ASI-3)	.59 **	.56 **	.48*	.41

* $p < .05$, ** $p < .01$.

Two hierarchical regression analyses were then conducted in both samples to investigate the relative importance of fear of anger and anxiety sensitivity in the prediction of anxiety- and depressive symptoms at study start. The first analysis examined the level of fear of anger and anxiety sensitivity in predicting symptoms of anxiety, and the second analysis examined the level of fear of anger and anxiety sensitivity in predicting symptoms of depression. Anxiety sensitivity was entered at step 1 and fear of anger was entered at step 2 in all analyses. Results can be seen in Table 3 and 4. In the student sample anxiety sensitivity accounted for a significant amount of variance in anxiety symptoms (34%) and the addition of fear of anger assigned at step 2 accounted significantly for an additional 6% of variance. In regard to depressive symptoms in the student sample anxiety sensitivity accounted significantly for 32% of the variance in depression and when fear of anger was entered in to the model at step 2, an additional of 7% of variance were significantly accounted. These results suggest that a significant amount of the variance in both anxiety- and depressive symptoms were attributed to anxiety sensitivity and fear of anger in the student sample and that a significant amount of the variance were accounted for by fear of anger even when controlling for anxiety sensitivity. In the patient sample anxiety sensitivity accounted significantly for 23% of the variance in anxiety symptoms and with the addition of fear of anger assigned at step 2 the model accounted for an additional 1 % of the variance. In regard to depressive symptoms in the patient sample anxiety sensitivity accounted for 17% of the variance in depression and when fear of anger was entered in to the model at step 2, an additional of 4% of variance were accounted. In the patient sample, the variance accounted for by anxiety sensitivity and fear of anger were not significant at the .05 level, except the variance accounted for by anxiety sensitivity in regard to anxiety symptoms at step 1.

Table 3

Hierarchical regressions predicting anxiety- and depressive symptoms in the student sample at study start

DV	Variable entered	<i>B</i>	<i>SE</i>	β	R^2	ΔR^2	<i>p</i>
Anxiety symptoms (GAD-7)							
Step 1	Anxiety sensitivity (ASI-3)	0.24	.02	.59	.34		.01
Step 2	Fear of anger (ACS-Anger)	0.14	.03	.27	.41	.06	.01
Depressive symptoms (PHQ-9)							
Step 1	Anxiety sensitivity (ASI-3)	0.24	.03	.56	.32		.01
Step 2	Fear of anger (ACS-Anger)	0.16	.03	.28	.38	.07	.01

Note: ΔR^2 reflects the change in R^2 after including fear of anger in Step 2.

Table 4

Hierarchical regressions predicting anxiety- and depressive symptoms in the patient sample at study start

DV	Variable entered	<i>B</i>	<i>SE</i>	β	R^2	ΔR^2	<i>p</i>
Anxiety symptoms (GAD-7)							
Step 1	Anxiety sensitivity (ASI-3)	0.17	.07	.48	.23		.02
Step 2	Fear of anger (ACS-Anger)	0.11	.19	.13	.25	.01	.06
Depressive symptoms (PHQ-9)							
Step 1	Anxiety sensitivity (ASI-3)	0.14	.07	.41	.17		.06
Step 2	Fear of anger (ACS-Anger)	0.18	.19	.23	.21	.04	.35

Note: ΔR^2 reflects the change in R^2 after including fear of anger in Step 2.

In order to examine if change in fear of anger was related to change in anxiety- and depressive symptoms over time, mean change score were calculated between the baseline scores and scores at four months of data collection. In this analysis only

students who reported that they had not been in contact with a mental health professional during their participation in this study were included ($n = 62$) in order to eliminate the potential impact of treatment on the four variables. Mean change scores were then tested for significance and effect sizes were calculated using four one-way repeated measures ANOVA for each variable. Results can be seen in Table 4. All four variables demonstrated a slight decline during the passage of time but in regard to fear of anger, Wilk's Lambda = .98, $F(1,61) = 1.12$, $p = .29$, anxiety sensitivity, Wilk's Lambda = 1.00, $F(1,61) = 0.00$, $p = .99$, and depressive symptoms, Wilk's Lambda = .95, $F(1,61) = 3.26$, $p = .08$ none of the changes were significant at the .05 level. In general there were no significant change in the tested variables on the student sample, with the exception of anxiety symptoms, Wilk's Lambda = .93, $F(1,61) = 4.56$, $p = .04$, who showed a significant and moderate decline during the period. These results suggest that the students, who did not receive any psychological or medical treatment during the four months between the tests, did not experience any change in fear of anger at group level due to passage of time.

Table 5

Mean change scores during passage of four months time in the non-treatment student sample

	<u>Measure 1</u>		<u>Measure 2</u>		<u>Change during 4 months</u>		<u>Effect size</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	η_p^2
Fear of Anger (ACS-Anger)	24.53	8.10	23.64	8.61	-0.89	6.60	1.12	.02
Anxiety sensitivity (ASI-3)	14.02	11.77	14.00	12.52	-0.02	7.79	0.00	.00
Anxiety symptoms (GAD-7)	5.68	4.55	4.55	3.90	-1.13	4.16	4.56*	.07
Depressive symptoms (PHQ-9)	6.37	4.99	5.42	5.08	-0.95	4.15	3.26	.05

Note: F-statistics and multivariate partial eta squared have been calculated using one-way repeated measures ANOVA. * $p < .05$.

Although there was no significant change in mean scores in regard to fear of anger in the non-treatment student sample at group level, individual changes within the sample did occur during the time. Two hierarchical regression analyses were therefore conducted to investigate the relative importance of change in fear of anger and anxiety sensitivity in the prediction of change in anxiety- and depressive symptoms over time in the non-treatment student sample. The change scores from the four months passage of time were used in the analyses and results can be seen in table 5. In the first analysis

change in anxiety sensitivity was entered at step 1 and change in fear of anger was entered at step 2 in order to predict change in anxiety. Change in anxiety sensitivity accounted for a significant amount of variance in predicting change in anxiety (13%) and the addition of change in fear of anger assigned at step 2 accounted significantly for an additional 25% of variance. The second hierarchical regression examined the relative importance of change in fear of anger and anxiety sensitivity in predicting change in depression in the non-treatment student sample. Change in anxiety sensitivity significantly accounted for 14% of the variance in predicting change in depression and when entered in to the model at step 2, change in fear of anger significantly accounted for an additional 8% of variance. Results suggest that a significant amount of the variance in the individual changes that occurred during the passage of time in the student sample (25% in regard to anxiety and 8% in regard to depression) were predicted by change in fear of anger even when controlling for change in anxiety sensitivity. In regard to predicting change in anxiety symptoms in particular, these results suggest that fear of anger may be an even more important predictor than anxiety sensitivity among non-treatment students.

Table 6

Hierarchical regressions predicting change in anxiety- and depressive symptoms over four months time in the non-treatment student sample

DV	Variable entered	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	ΔR^2	<i>p</i>
Change in anxiety symptoms (GAD-7)							
Step 1	Change in anxiety sensitivity (ASI-3)	0.20	.06	.37	.13		.01
Step 2	Change in fear of anger (ACS-Anger)	0.34	.07	.55	.39	.25	.01
Change in depressive symptoms (PHQ-9)							
Step 1	Change in anxiety sensitivity (ASI-3)	0.20	.06	.38	.14		.01
Step 2	Change in fear of anger (ACS-Anger)	0.19	.08	.31	.22	.08	.02

Note: ΔR^2 reflects the change in *R*² after including fear of anger in Step 2.

Discussion

The main aim of this study was to explore fear of anger and its relation to anxiety- and depressive symptoms in a clinical sample and a student sample by answering three questions: (1) Is fear of anger elevated among patients with anxiety disorders and depression compared to a student sample? (2) Is fear of anger related to anxiety- and depressive symptoms (3) Is change in fear of anger related to change in anxiety- and depressive symptoms over time?

Fear of anger might be more of a general psychological process rather than a distinctive feature of anxiety disorders and depression

Based on previous research that has shown that patients with anxiety disorders and depression experience more frequent and intense negative emotions than healthy individuals (Barlow et al., 2014) and that these patients seem to fear losing control over strong emotions in general (Berg et al., 1998; Melka et al., 2011; Mennin et al., 2004; Williams et al., 1997), one would assume that fear of anger may be a central feature of anxiety disorders and depression. In this study however there were no significant difference in the level of fear of anger between patients with anxiety disorders and depression compared to a student sample. This may suggest that fear of anger may not be more prominent among patients with anxiety disorders and depression than among students in general. These results are somewhat in contrast to earlier research that has demonstrated significantly higher levels of fear of anger measured by ACS-Anger among people with generalized anxiety disorder (GAD) than people without this diagnosis (Mennin et al., 2005). Mennin et al. (2005) documented mean levels of fear of anger measured by ACS-anger on American undergraduate students with and without GAD, as well as a clinical GAD-sample compared to individuals without any anxiety disorders or depression. The mean scores on fear of anger obtained in this study are in similar levels compared to the mean scores in the study by Mennin et al. (2005) but with the difference that the clinical sample in this study did not show higher levels of fear of anger compared to the students. The different results between this study and the one made by Mennin et al., may possibly be a reflection of the different diagnoses included in the clinical samples, since 22,7 % of the patients in the present study did not have a GAD diagnosis. A possible conclusion from the present research might therefore be that even though individuals with GAD have reported higher levels of fear of anger than individuals without GAD, there seems to be no clear difference in fear of anger between patients with anxiety disorders and depression compared to students in general.

In contrast to anxiety sensitivity that was significantly higher in the clinical sample compared to the student sample in this study, fear of anger were not shown to be a distinctive feature among patients with anxiety disorders and depression. Fear of anger seems thus to be linked to broader categories of people than just patients with anxiety disorders and depression and may possibly be understood as a more general psychological process rather than a distinctive clinical feature. On a societal level, anger may be an emotion that is generally unappreciated to express and in some contexts even socially unacceptable which may contribute to fear of anger being part of a general societal phenomenon rather than a clinical feature of patients with anxiety disorders and depression. The fear to express anger likely differs between individuals but may also be a reflection of social and cultural norms and contexts shared among people. That there were no significant difference in regard to level of fear of anger between the patients with anxiety disorders and depression compared to the students in this study may thus possibly reflect shared cultural norms in regard to anger expression in both samples. Since there is no clinical cut off for fear of anger in the Affective control scale it is also possible to argue that the levels of fear of anger obtained in this study are not a substantial feature for neither the student nor the clinical sample. However, the results

from this study still suggest that fear of anger might not be a distinctive clinical feature of anxiety disorders and depression.

Fear of anger is positively related to anxiety- and depressive symptoms

Even though fear of anger was not shown to be a distinctive feature for patients with anxiety disorders and depression compared to students in this study, fear of anger was demonstrated to be positively correlated with anxiety- and depressive symptoms in both samples. The strengths of the positive correlations differed somewhat between the samples, with significant moderate correlations between fear of anger and anxiety- and depressive symptom in the student sample and non-significant correlations at the .05 level in the patient sample. In relation to anxiety sensitivity, which in previous research been documented to be a shared feature among anxiety disorders and depression (Naragon-Gainey, 2010) and been related to symptom reduction in therapy (Boswell et al., 2013), fear of anger was shown in the hierarchical regression analyses to have a unique significant relation to anxiety- and depressive symptoms. Even when controlling for anxiety sensitivity in the hierarchical regression analyses fear of anger predicted a significant amount of variance in the student sample in regard to anxiety as well as depressive symptoms. Since the relation between fear of anger and anxiety- and depressive symptoms in the patient sample were not significant at the .05 level in neither the correlation analysis nor the hierarchical regression analysis, the impact of fear of anger on psychological symptoms in the patient sample was not as evident as among the students. However, with positive correlations in both samples and with a significant amount of variance in anxiety- and depressive symptoms predicted by fear of anger, even when controlling for anxiety sensitivity in the student sample, the results suggest that fear of anger might be a relevant feature in relation to both anxiety- and depressive symptoms.

In line with previous research that has demonstrated a connection between anger and anxiety disorders and depression (Barrett et al., 2016; Hawkins & Cogle, 2011) this study is the first, to my knowledge, to document a positive correlation between fear of anger and anxiety- and depressive symptoms. The reason that people with higher levels of fear of anger might experience more anxiety and depressive symptoms than other individuals may be understood in the light of the fight-or-flight fear response that people exhibit when encountering a threatful situation. Both anger and anxiety are emotions that are characterized by an alerted and aroused state, but while anxiety is linked to motoric arousal and behavioral manifestations directed away from the threat such as avoidance and escape behavior, anger is in contrast linked to approach motivations and motoric arousal towards the threat (Carver & Harmon-Jones, 2009). The emotions of anger and anxiety may thus be reflections of two different ways to relate to threatful situations, and people who are afraid to express anger may tend to suppress that feeling and therefore be more prone to avoid perceived threats with behavioral manifestations linked with anxiety such as escape and avoidance instead of expressing anger. As with all basic emotions anger is an emotional experience that can be functional and produce adaptive effects on behavior. To be uncomfortable with or even fear the expression of a basic emotion may obviously be troublesome, since it may

inhibit the person from using the functional aspect of motivating adaptive behavior that may come from that emotion. To suppress angry feelings because of fearing negative consequences of the emotional expression will reasonably make it harder for the individual to use anger in adaptive ways such as stand up for ones needs or protected oneself from perceived threats or harm. In relation with anxiety, being an aroused state that often is associated with a sense of helplessness, anger can in some instances be associated with a feeling of being more in control of the situation. To be able to stand up for oneself and to confront a threatful situation instead of avoiding it may be an important function of anger that may possibly contribute to less anxiety- and depressive symptoms over time. The ability to express anger adaptively may be an important factor in preventing anxiety and depressive symptoms, and may in that sense offer a possible explanation to the documented correlations between fear of anger and psychological symptoms obtained in this study. Future studies are however still needed to further address the possible function of anger in the development and maintenance of anxiety- and depressive symptoms.

Fear of anger predicts change in anxiety- and depressive symptoms over time

In regard to change in anxiety- and depressive symptoms over time, this study found that change in fear of anger predicted a significant amount of the variance in the non-treatment student sample even when controlling for anxiety sensitivity. These results suggest that change in fear of anger is related to change in anxiety- and depressive symptoms over time and that the relationship is not solely due to the influence of anxiety sensitivity. Interesting to note is that in regard to change in anxiety symptoms over time, change in fear of anger predicted an additional 25% of variance even when controlling for the 13 % of variance predicted by anxiety sensitivity at step 1 in the hierarchical regression analyses. These results suggest that change in fear of anger may be an even more important predictor in regard to change in anxiety symptoms over time among non-treatment students than anxiety sensitivity itself. To understand why change in fear of anger was shown to be more strongly connected to change in anxiety symptoms than anxiety sensitivity in this study, one may possible argue that students generally encounter more life events that affect their fear of anger than their level of anxiety sensitivity over time. In line with earlier described results that has pointed out that fear of anger may be a more general psychological process rather than a distinct clinical feature of anxiety disorders and depression this results suggest that fear of anger may be an important psychological process related to psychological symptoms among non-treatment students. In contrast to anxiety sensitivity that has been demonstrated to be a distinctive feature among anxiety disorders and depression (Naragon-Gainey, 2010), fear of anger may be a more general psychological process and therefore be more strongly related to change in psychological symptoms among non-treatment students than the more clinical distinctive feature of anxiety sensitivity. These results may therefore be especially interesting for practitioners concerned in students well-being since it suggest that fear of anger may be a factor to address in the treatment of anxiety- and depressive symptoms among students. Emotion-focused

therapy models aimed to address emotion regulation and fear of anger in particular, may be a promising option to consider in student care settings based on these results. Further studies on other non-clinical samples than students would shed light on whether these results are specific for students or rather a feature of the general non-clinical population.

Even though the level of fear of anger as well as anxiety- and depressive symptoms did change within individuals during the four months of this study, it is important to note that mean scores of fear of anger did not change significantly at group level in the non-treatment student sample. This result indicates that fear of anger does not change on group level solely by the passage of time. Since this study has showed a positive correlations between fear of anger and anxiety- and depressive symptoms at pre-treatment and also demonstrated that there was no significant effect on fear of anger due to passage of time, the potential impact of psychological treatment on fear of anger will be an important topic to address in future research.

Limitations and future research

When interpreting the findings from this study, some important limitations should be considered. First, since this study was based on two different samples, it is important to note that the results from the different samples must be interpreted separately. For example, the sample size among the patients with anxiety disorders and depression was small compared to the student sample, which may possibly have rendered important relationships not statistically significant. Both the correlation analyses and hierarchical regression analyses in the patient sample should therefore be interpreted with caution since non-significant results are dubious to interpret. Even though statistically significant results from the correlation and hierarchical regression analyses among the student sample where in similar levels as the patient sample, this study can not present as clear answers concerning the role of fear of anger in relation to anxiety- and depressive symptoms among patients. It may also be possible that the relationships between fear of anger and anxiety- and depressive symptoms that were obtained in the student sample are due to specific characteristics of students that make the results ambiguous to generalize to broader non-clinical populations. One can for example argue that fear of anger may be a feature that is particular present among university students who may be affected by university environments that may directly or indirectly encourage traits such as conscientiousness and adaptiveness rather than expressing anger. A second limitation in this study is that since only pre-treatment data was obtained in the patient sample, temporal interpretations from this study is limited to the student sample. The influence of fear of anger on change in anxiety- and depressive symptoms over time was only analyzed in the student sample, which means that the influence of fear of anger over time among patients remains unanswered in this study. Since the student sample was only analyzed at two measure points, and not at multiple intervals it is also impossible to assess the precise directionality of change between the tested variables. Although the assumption that negative reactions to emotions, such as fear of anger and anxiety sensitivity, leads to anxiety- and depressive symptoms shaped the formulation of the analyses in this study, its also possible that the direction of change is the other way around. Decreases in anxiety- and depressive symptoms may in

fact possibly lead to decreased fear of anger in the sense that individuals may have less negative reactions to their expression of anger when they are feeling less anxious or depressed.

For future research it would be interesting to follow up the patient sample at multiple intervals during the course of treatment to investigate whether fear of anger may change due to Cognitive-behavioral therapy and if that change precedes change in anxiety- and depressive symptoms over time. Since this study has showed a positive correlation between fear of anger and anxiety and depressive symptoms, it would be interesting to investigate with a study design of multiple intervals whether fear of anger may have a causal connection with these psychological symptoms and thus be a potential change process to address further in therapy. Future research would also gain from investigating the relation between fear of anger and other clinical relevant features of psychopathology beyond anxiety- and depressive symptoms. Since earlier research has demonstrated that suppressing emotions is negatively related to well-being and interpersonal functioning (Gross & John, 2003) and that anger suppression is positively related to somatoform symptoms (Bong et al., 2008) it would be interesting to investigate fear of anger within a broader clinical perspective. Due to social contexts and norms that may directly or indirectly inhibit individuals from expressing anger adaptively one may speculate that fear of anger could be related to the experience of other negative valence emotions such as guilt. Even quality of interpersonal relations would be interesting to address in relation with fear of anger, since one might aspect fear of anger to affect ones ability to address ones needs that may have interpersonal consequences. Besides other psychological symptoms, it would also be interesting to relate fear of anger to psychical health concerns such as for example somatoform symptoms. Since fear of anger is generally a sparsely explored phenomenon and since the result from this study has documented a positive relation with anxiety- and depressive symptoms, future research would gain from looking in to the topic from an even broader clinical perspective.

Conclusion

This study is the first, to my knowledge, to investigate the relations between fear of anger and anxiety- and depressive symptoms. The results have demonstrated that fear of anger is positively related to anxiety and depressive symptoms and that change in fear of anger predicts a significant amount of variance of change in anxiety- and depressive symptoms over time among non-treatment students. Fear of anger thus seems to be a promising concept to investigate further both in non-clinical and clinical populations, but more studies are needed in order to understand more of its function in anxiety disorders and depression and its possible influence on treatment. However, since there was no significant difference in fear of anger between the patient and student sample, this might indicate that fear of anger may be more of a general psychological process than a distinctive feature of anxiety disorders and depression.

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