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Self-compassion in relation to cognitive coping strategies and anxiety/depression: A comparison between men and women

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Abstract

Background: Theoretically, there are 'more adaptive' strategies which are associated with fewer symptoms of anxiety and depression and there are 'less adaptive' strategies which are linked with more symptoms of anxiety and depression. Since little is known about the 'more adaptive' strategies; this study focuses on a possible 'more adaptive' strategy: self-compassion. Therefore, the present study aimed to examine how self-compassion is related to three cognitive coping strategies (rumination, catastrophizing and self-blame) and symptoms of anxiety and depression, in comparison between men and women.

Methods: Patients from a GP practice (N = 143) participated in an online survey study, with the following questionnaires: Hospital Anxiety Depression Scale (HADS), Cognitive Emotion Regulation Questionnaire (CERQ) and Self-Compassion Scale (SCS).

Results: Self-compassion was associated with a lower anxiety/depressive total score and catastrophizing was related to a higher anxiety/depressive total score. Rumination and self-blame were not associated with a higher anxiety/depressive total score. There were no differences between men and women on the various kinds of measurements. Men and women only differ in the relation between catastrophizing and anxiety/depressive total score.

Discussion: The current study confirmed previous research which examined that selfcompassion was associated with less symptoms of anxiety and depression, in contrast to catastrophizing, which was linked with more anxiety and depressive symptomology. Additionally, men and women were different in the relation between catastrophizing and anxiety and depressive symptoms. In terms of intervention, people could learn selfcompassion and unlearn catastrophizing to diminish or prevent anxiety/depressive symptoms.

About 1 out of 5 persons have experienced an anxiety or depressive disorder in their lifetime (Trimbos Institute, 2010). Fortunately, there are many interventions which treat those disorders. These interventions often target cognitions to treat anxiety and depression, as in cognitive behaviour therapy. This has been shown to be an effective intervention for, among others, anxiety and depression (Chambless & Ollendick, 2001). Besides, cognitive coping also targets people's cognitions. Cognitive coping is managing the intake of emotionally arousing information on a cognitive way (Thompson, 1991). Furthermore, through cognitive coping people may regulate emotions and keep control over their emotions during or after the experience of a stressful event (Garnefski, Kraaij & Spinhoven, 2001). Examples of cognitive coping strategies are self-blame which refers to thoughts of blaming yourself for what you experienced; catastrophizing which refers to thoughts of explicitly emphasizing the terror of an experience and rumination which refers to thinking about the feelings and thoughts associated with the negative event (Garnefski et al., 2001). In terms of intervention it might be important how cognitive coping strategies are related to symptoms of anxiety and depression in men and women to know which strategy people benefit from. Additionally, in an intervention people could possibly learn this beneficial cognitive coping strategy to diminish or prevent symptoms of anxiety and depression.

Extant research describes cognitive coping strategies and their influence of reporting symptoms of anxiety and depression. There are theoretically 'more adaptive' strategies which yielded for fewer anxiety and depression and 'less adaptive' strategies which are related to more symptoms of anxiety and depression (Garnefski et al., 2001). It has been shown that especially rumination, self-blame and catastrophizing are strongly related to the reporting of symptoms of anxiety and depression (Garnefski et al., 2002; Garnefski et al., 2001; Raes, 2010; Garnefski et al., 2004; Martin & Dahlen, 2005). Therefore, in this study only rumination, self-blame and catastrophizing will be examined. The literature also suggests that the link between a 'more adaptive' cognitive coping strategy and symptoms of anxiety and depression is less clear. Positive reappraisal is defined by Garnefski et al. (2001) referring to "thoughts of attaching a positive meaning to the event in terms of personal growth" (p. 1315). Only positive reappraisal is mentioned as an adaptive cognitive coping strategy related to lower scores on various kinds of anxiety and depression measurements (Garnefski et al., 2004; Garnefski et al., 2001; Martin & Dahlen, 2005). For example, a study by Garnefski & Kraaij (2006) which compared cognitive coping strategies and symptoms of depression in five specific samples (ranging from adolescents to elderly) showed in all groups the same picture: higher extents of reporting rumination, self-blame and/or catastrophizing were positively related to symptoms of

depression, whereas higher extents of using positive reappraisal were negatively related to depression. Since little is known about other 'more adaptive' strategies, this study focuses on a probable 'more adaptive' strategy which might be related to fewer symptoms of anxiety and depression.

This potential 'more adaptive' strategy could be self-compassion. It has been defined in terms of three main components: self-kindness, common humanity and mindfulness. Self-kindness refers to being kind and understanding toward oneself, common humanity refers to perceiving one's experiences as part of the larger human experience and mindfulness refers to holding painful thoughts and feelings in balanced awareness (Neff, 2003a). Growing evidence suggests that self-compassion is related to less symptoms of anxiety and depression (Macbeth & Gumley, 2012; Leary et al., 2007; Neff, 2003b). For instance, a study by Neff (2003b) showed that higher scores on the Self-Compassion Scale (SCS) were consistently related to lower scores on various kinds of anxiety and depression self-report scales. Furthermore, it has been demonstrated that self-compassion is related to psychological well-being and it possibly predicts positive psychological health (Odou & Brinker, 2014; Van Dam et al., 2011; Neff, Kirkpatrick & Rude, 2007). Looking at these features of self-compassion, it could be a promising 'more adaptive' strategy to diminish symptoms of anxiety and depression.

Existing research describes another finding of several studies which may be important. Studies by Neff (2003b) and Raes (2010) indicated that women have significantly less selfcompassion than men. Furthermore, there were also significant differences found in the reporting of using cognitive coping strategies like rumination and catastrophizing. Women reported to use these cognitive coping strategies more often than men (Garnefski et al., 2004). Moreover, twice as many women are suffering from anxiety and depression than men (Trimbos Institute, 2010). In sum, there are gender differences in the reporting of selfcompassion, cognitive coping strategies and in the reporting of symptoms of anxiety and depression. In terms of interventions it might be important to know how these relations between the above-mentioned mechanisms express in men and women, to improve treatments for both._Perhaps, gender plays a role in the relation between the use of cognitive coping strategies and symptoms of anxiety and depression. Moreover, because gender plays a large role in emotional disorders, it might be possible that gender also affects the relation between self-compassion and symptoms of anxiety and depression (Raes, 2010).

The present study will therefore add to the existing literature how self-compassion is related to three cognitive coping strategies and symptoms of anxiety and depression, in comparison between men and women. At first, it will be examined to what extent self-

compassion, rumination, self-blame and catastrophizing are related to symptoms of anxiety and depression. It is hypothesized in accordance with previous research that self-compassion will be negative related to symptoms of anxiety and depression and that self-compassion will be associated with a lower anxiety-depressive total score (Macbeth & Gumley, 2012: Leary et al., 2007; Neff, 2003b). Since the existing literature showed a positive relation between the cognitive coping strategies; rumination, self-blame and catastrophizing with symptoms of anxiety and depression (Garnefski et al., 2002; Garnefski et al., 2001; Raes, 2010; Garnefski et al., 2004; Martin & Dahlen, 2005) this relation is also expected in the current study. Furthermore, it is expected that rumination, self-blame and catastrophizing will be associated with a higher anxiety/depressive total score. Secondly, it will be examined if these relations are different for men and women. In accordance with previous research, it is hypothesized that women will have significantly less self-compassion than men (Neff, 2003b; Raes, 2010). It is also expected based on existing literature, that women will report to use rumination and catastrophizing more often than men. Hence, the literature found no differences in the use of self-blame between men and women (Garnefski et al. 2004; Martin & Dahlen, 2005). Since Raes (2010) suggested that gender may play a role in the relation between self-compassion and symptoms of anxiety and depression, it is expected that men and women will differ in the relation between self-compassion and anxiety/depressive total score. Additionally, it is hypothesized that men and women will differ in the relation between cognitive coping strategies and symptoms of anxiety and depression.

Methods

Participants and Procedure

This study is a second measurement of an online survey study started in 2015 by Leiden University. Participants were recruited via GP practice Aletta in Utrecht. At the first measurement in 2015 participants were asked at the end of the online survey: '*May we approach you again in the future for a questionnaire on a similar topic?*' This question could be answered with '*yes*' or '*no*'. If participants agreed they had to fill in their mail address. Hence, there was a list of mail addresses from people who agreed for approaching them for a future study.

In the present online survey study those people were sent an invitation letter per mail to thank them for participating in 2015 and ask them to participate in the recent study. Before taking part in the study participants were informed about the study by an information letter at the beginning of the questionnaire. To give informed consent participants had to answer 'yes'

on the following statement: '*I hereby declare that I voluntarily participate in this research and agree with the procedures described*'. Participants were told that they participated in a study about negative events and psychological well-being. Self-compassion, rumination, self-blame, catastrophizing, anxiety nor depression were mentioned in the recruitment, information letter or informed consent, to prevent response bias by participants (see Reynolds & Livingston, 2011). All participants that participated in the study had a chance to win one of three vouchers. The participants had to meet the following inclusion criteria: age older than eighteen years and agreement with the informed consent. Participants who did not correctly completed the survey were excluded from further analysis.

A total of 284 invitations were sent to the participants, however, nine invitations were sent to an incorrect mail address. Of these, seven mail addresses were incorrectly filled in by the research team. After correction of the mail addresses, the invitations were sent again to the seven mail addresses. Three of the seven incorrect mail addresses no longer existed. Therefore, a total of 279 invitations were correctly sent and received by the participants. One week after the first invitation a reminder was sent, to thank those who filled in the questionnaire and to remind those who did not send it back yet. It was not possible to obtain information about the possible differences between the people who participated in the study and those who did not because of ethical issues.

Finally, of these 279 invited participants, 167 participants completed the questionnaire. Additionally, 24 participants were excluded from further analysis because they did not meet the inclusion criteria or did not fulfilled the questionnaire correctly. The final sample consisted of 143 participants with 29 men (20.3%) and 114 women (79.6%), age ranging between 20 and 68 years old (M = 52.9, SD = 11.3) and with most participants of Dutch nationality (N = 138, 97.2 %). In this sample, N = 7 (4.9 %) lived alone with children, lived alone without children and N = 42 (29.6 %) lived with their parents. The highest completed education of the sample was primary school (N = 2, 1.4%), lower vocational education (N = 2, 1.4%), higher general secondary education/pre-university education and (N = 9, 6.3%), higher vocation education/university (N = 125, 88%).

The participants who participated in the study were guaranteed anonymity. The proposal was submitted to The Psychology Ethics Committee because humans were participating as subjects in this study. The Psychology Ethics Committee had reviewed and approved the research proposal. This study utilized an observational design with self-reported

symptoms of anxiety and depression as dependent variable and self-reported self-compassion, rumination, self-blame and catastrophizing as independent variables.

Material

The questionnaire covered more areas than reported in this paper. Here, measures of anxiety and depressive symptoms, cognitive coping strategies and self-compassion will be described.

Hospital Anxiety Depression Scale (HADS). The HADS is a self-report questionnaire designed to measure possible anxiety disorders and depression among patients in non-psychiatric hospital clinics (Zigmond & Snaith, 1983). The HADS consists of two subscales of seven items each, that measure anxiety (HADS-A) with Cronbach's alpha = .83 and depression (HADS-D) with Cronbach's alpha = .82 (Bjelland et al., 2002). The psychometric properties of the HADS are moderate (Spinhoven et al., 1997). Hence, it performs well in screening for anxiety and depression in patients from non-psychiatric hospital clinics (Bjelland et al., 2002). Participants were asked to *fill in the answer that best reflects how they felt the last week* by going through a list of statements (e.g. *I still enjoy the things I used to enjoy; I get sudden feelings of panic*). Answers were given at a 5-points Likert scale. After recoding eight items, subscale scores were computed by summing up the seven items per scale with a range from 0 to 21. The higher the score on the HADS, the more participants experience symptoms of anxiety and/or depression.

Cognitive Emotion Regulation Questionnaire (CERQ)

The CERQ is a 36-item, self-report measurement and is designed to assess cognitive coping strategies through assessing what people think after the experience of threatening or stressful life events (Garnefski et al., 2001). Nine subscales (most of them exceeding Cronbach's alpha = .80) can be conceptually distinguished, each consisting of four items. In this study only the subscales '*self-blame*', '*rumination*' and '*catastrophizing*' will be used. Reliability and validity of the CERQ are good (Garnefski & Kraaij, 2007; Martin & Dahlen, 2005; Garnefski et al., 2001). Before the participants answer a list of statements in terms of how often they think those statements, the following sentences are written at the top: '*Everyone gets confronted with negative or unpleasant events now and then and everyone responds to them in his or her own way. With the following questions, you are asked to indicate what you generally think, when you experience negative or unpleasant events'. Answers were given at a 5-points Likert scale ranging from 1 = (almost) never and 5 = (almost) always. Subscale score, the more the specific cognitive coping strategy is used.*

Self-Compassion Scale (SCS)

The 23-item Dutch-version of the SCS was used (Neff & Vonk, 2009). Three of the 26 items from the original English version by Neff (2003b) were removed due to difficulties in translation (the authors did not mention which type of difficulties they encountered). The SCS is a self-report measure with six subscales measuring three overlapping components of selfcompassion, arranged as positive-negative opposing pairs: self-kindness versus self-judgment, a sense of common humanity versus isolation, and mindfulness versus over-identification (MacBeth & Gumley, 2012). It is shown that the SCS is a robust, reliable and theoretically valid measure of self-compassion, but the proposed six-factor structure revealed mixed findings (MacBeth & Gumley, 2012; Neff, 2003b; Lopez et al., 2015). Therefore, in this study the SCS total score is used, which demonstrated good internal consistency with a Cronbach's alpha of .86 (Lopez et al., 2015). The questionnaire starts with a short introduction which includes the following sentences: When answering the questions, it is important to see how the question now applies to you. Please be honest as to what it is like for you at this moment and not how it was for you in the past or how you think it should be. Answers were given at a 7-points Likert scale $(1 = rarely \text{ or never}; 7 = almost always})$. Items representing uncompassionate response are reverse-coded so that higher scores represent a lower frequency of self-compassion. A total score that represents an overall measure of self-compassion can be calculated by recoding the uncompassionate responses and computing a mean score from all items. The mean score may range from 23 to 161, with higher scores indicating more selfcompassion.

Statistical Analysis

For data-analysis IBM SPSS Statistics 24 was used. At first, the descriptive variables of the study will be presented (means, standard deviations, range and Cronbach's alpha's). To answer the first research question; to what extent are self-compassion, rumination, self-blame and catastrophizing related to symptoms of anxiety and depression a bivariate correlation and a multiple regression analysis (MRA) is used. Moreover, Pearson's correlation coefficient will be used and the direct effects of the hierarchical MRA will be examined. With a significance level of .05 the hypotheses are confirmed. To answer the second research question; are these relations different for men and women, MRA is used. Additionally, separate MRA's for men and women are used to examine the interaction effects between cognitive coping strategies, including self-compassion, and gender on symptoms of anxiety and depression. The hypotheses are confirmed with a significance level of .05.

Results

Descriptive Statistics

Descriptive variables were analysed (see Table 1). This showed that most questionnaires had good reliability with Cronbach's alpha > .70. Only the subscale catastrophizing of the CERQ had a lower Cronbach's alpha (.62). Moreover, means and standard deviations were shown in Table 1 for men, women and the total group. Two-tailed, paired samples t tests were used to compare the subscales of the HADS and to compare the subscales of the CERQ. On average, participants reported more symptoms of anxiety (M = 13.38, SD = 3.53), than symptoms of depression (M = 10.57, SD = 3.33). This difference, 2.81, BCa 95% CI [2.31, 3.31], was significant t(141) = 11.18, p < .000, and represented a large-sized effect, d = 0.82. Furthermore, participants reported on average more rumination (M = 11.19, SD = 3.50), than self-blame (M = 8.82, SD = 3.22). This difference, 2.37, BCa 95% CI [1.71, 3.03], was significant t(141) = 7.09, p < .000, and represented a medium-sized effect, d = 0.71. Rumination (M = 11.19, SD = 3.50) was on average also more reported than catastrophizing (M = 5.71, SD = 1.92). Rumination scores were 5.48 points higher than scores on catastrophizing, BCa 95% CI [4.92, 6.03]. This difference was statistically significant, t(141) = 19.53, p < .000, and represented a large-sized effect, d = 1.60. On average, participants reported more self-blame (M = 8.82, SD = 3.22), than catastrophizing (M = 5.71, SD = 1.92). This difference, 3.11, BCa 95% CI [2.52, 3.69], was significant t(141) = 10.49, p < .000, and represented a large-sized effect, d = 1.21.

There were ten univariate outliers found by exploring the box-plots of the variables: four of the subscale catastrophizing, four of the subscale self-blame, one of the subscale rumination and one of the total HADS scale. Further examination of the box-plots showed that none of them exceed the criteria of more than three standard deviations of the mean (Leys, Klein, Bernard & Licata, 2013).

Table 1

Descriptive Variables of the Hospital Anxiety Depression Scale (HADS), the Cognitive Emotion Regulation Scale (CERQ) and the Self-Compassion Scale (SCS) in Men, Women and the Total Group

	1										
	Men		Women		T-test ^a	Total					
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>T</u>	<u>M</u>	<u>SD</u>	<u>Min</u>	<u>Max</u>	<u>Range</u>	<u>Cronb</u>
											<u>ach 's</u>
											<u>Alpha</u>
HADS Total	23.59	7.07	24.09	5.94	36*	23.99	6.16	14	43	29	.89
HADS-A	13.17	4.13	13.43	3.37	37*	13.38	3.53	7	23	16	.83
HADS-D	10.41	3.81	10.61	3.21	20*	10.57	3.33	7	23	16	.83
CERQ:	9.55	3.49	8.63	3.13	1.33*	8.82	3.22	4	19	15	.75
self-blame											
CERQ:	10.55	4.17	11.35	3.30	-1,10*	11.19	3.50	4	20	16	.79
rumination											
CERQ:	6.17	2.25	5.59	1.82	1.38*	5.71	1.92	4	14	10	.62
catastrophizing											
SCS	102.93	23.31	100.25	20.64	.55*	100.80	21.15	40	147	107	.92

^a Independent t-tests comparing men and women with a Bonferroni correction of $\alpha = .007$ * non-significant with p > .007

Relationships Between the Variables Self-compassion, Rumination, Self-blame and Catastrophizing with Symptoms of Anxiety and Depression

Firstly, to assess the size and direction of the linear relationships between the abovementioned variables, a bivariate Pearson's product-moment correlation(r) was calculated. The assumptions of normality, linearity and homoscedasticity were assessed, and found to be supported. The bivariate correlation by Pearson showed that self-compassion was negatively significant correlated to anxiety, r(141) = -.55, p < .01 and depression, r(141) = -.38, p < .01(see Table 2). This negative relation meant more reported self-compassion was associated with less reported anxiety and depression. There was a significant positive relation between catastrophizing, r(141) = .25, p < .01, self-blame, r(141) = .20, p < .05, and symptoms of

anxiety. Self-blame was also positively significant associated with depression, r(141) = .20, p < .05. These positive relations meant that more reported self-blame and catastrophizing were associated with more symptoms of anxiety and more reported self-blame was also related to symptoms of depression. Catastrophizing, r(141) = -.19, p < .05, and self-blame, r(141) = -.31, p < .01, were negatively significant related to self-compassion. Moreover, rumination was positively significant related to self-blame r(141) = .30, p < .01 and with catastrophizing r(141) = .35, p < .01. Anxiety and depression were positively significant correlated to each other, r(141) = .62, p < .01.

Table 2

Bivariate Correlation by Pearson Correlation Coefficient Between the Variables Selfcompassion, Rumination, Self-blame, Catastrophizing, Anxiety and Depression

Variables	1	2	3	4	5	6
1. Self-compassion	-					
2. Rumination	13	-				
3. Self-blame	31**	.30**	-			
4. Catastrophizing	19*	.35**	.13	-		
5. Anxiety	55**	.04	.20*	.25**	-	
6. Depression	38**	08	.20*	.13	.62**	-

*p < .05. **p < .01.

Secondly, multiple regression analysis (MRA) was performed with the same variables (Table 3). Only in this analysis the subscales anxiety and depression were combined in the anxiety/depression total score, so there was only one dependent variable. The assumptions of normality, linearity, homoscedasticity and multicollinearity were tested and supported. To control the variables gender and age these were entered first in the analysis. Gender and age accounted for a non-significant 1 % of the variance in symptoms of anxiety and depression, $R^2 = .00$, F(2, 139) = .08, p = .93. Then, self-compassion, catastrophizing, self-blame and rumination were added to the analysis. Thereby the total explained variance increased to 58 %, $R^2 = .58$, F(6, 135) = 11.30, p = .00. For this model, self-compassion, t(141) = -6.54, p < .00, catastrophizing, $t(141) = 2.39 \ p < .02$ and rumination, t(141) = -2.38, p < .02 were all significant predictors of the anxiety/depression total score.

Table 3

Multiple Correlation Coefficient (R), Standardized Regression Coefficient (β), t-values and Corresponding p-values For Each Predictor Variable on Each Step of a Hierarchical Multiple Regression Predicting Anxiety/Depression Total Score

	R	R^2	b	SE B	β	t	р
Model 1	.03	.00					
Gender			.50	1.31	.03	.38	.71
			(-2.09, 3.08)				
Age			00	.05	00	03	09
			(09, .09)				
Model 2	.58	.33					
Gender			1.23	1.12	.08	1.10	.09
			(98, 3.45)				
Age			.07	.04	.13	1.81	.07
			(01, .15				
Self-compassion			15	.02	50	-6.54	.00
			(19,10)				
Catastrophizing			.59	.25	.18	2.39	.02
			(.10, 1.08)				
Self-blame			.22	.15	.12	1.48	.14
			(07, .52)				
Rumination			33	.14	19	-2.38	.02
			(61,06)				

Differences in Men and Women in the Relations Between the Variables Self-compassion, Rumination, Self-blame and Catastrophizing with Symptoms of Anxiety and Depression To test whether men and women differ in measures of anxiety and depression, cognitive emotions strategies and self-compassion, multiple independent t-tests were performed (Table 1). A Bonferroni correction was applied to counteract the problem of multiple comparisons. On average, men reported more self-blame (M = 9.55, SD = 3.49), catastrophizing (M = 6.17, SD = 2.25), and self-compassion (M = 102.93, SD = 23.31), than women who reported less self-blame (M = 8.63, SD = 3.13), catastrophizing (M = 5.59, SD = 1.82), and self-compassion (M = 100.25, SD = 20.64). Women reported more symptoms of anxiety (M = 13.43, SD =3.37), depression (M = 10.61, SD = 3.21) and rumination (M = 11.35, SD = 3.30), than men

SELF-COMPASSION, COGNITIVE COPING STRATEGIES, ANXIETY/DEPRESSION who reported less anxiety (M = 13.17, SD = 4.13), depression (M = 10.41, SD = 3.81) and rumination (M = 10.55, SD = 4.17). However, all these differences were statistically not significant.

Hierarchical MRA was employed, using the anxiety/depression total score (see Table 5). First, MRA was performed for men. Second, the same analysis was repeated for women. Before interpreting the results of the MRA, assumptions of normality, linearity, multicollinearity and outliers were tested. The assumptions were met and therefore would not interfere with the ability to interpret the outcome of the MRA. To control for the variable age, it was entered first in the analysis.

In the analysis for men, the variable age accounted for a significant 15% of the variance in compliance, $R^2 = .16$, F(1, 27) = 4.95, p = .04. Thereafter, self-compassion, catastrophizing, self-blame and rumination were entered in the analysis and accounted for a significant 47% of the variance, $R^2 = .47$, F(4, 23) = 3.36, p = .03. For this model, only self-compassion, t(141) = -3.26, p < .00, was a significant predictor of the anxiety/depression total score.

For women, the variable age accounted for a non-significant 5% of the variance in compliance, $R^2 = .00$, F(1, 111) = .53, p = .47. The total variance increased with 33% after adding self-compassion, catastrophizing, self-blame and rumination to the analysis. Also in women, self-compassion was a significant predictor of the anxiety/depression total score, t(141) = -5.39, p < .00. In contrast to the model for men, catastrophizing was in the model for women a significant predictor of the anxiety/depression total score, t(141) = 2.87, p < .00.

Table 4

Predictors	Men	Women		
	<u>β</u>	<u>β</u>		
Gender	-	-		
Age	39	.07		
Self-compassion	58*	46**		
Catastrophizing	.00	.24*		
Self-blame	.00	.13		
Rumination	16	15		
Total explained variance	47%	33%		
(R ²)				

Standardized Regression Coefficients (β) for Men and Women for Each Predictor Variable in a Hierarchical Multiple Regression Predicting Anxiety/Depression Total Score

p* < .05. *p* < .01.

Discussion

The present study aimed to examine how self-compassion is related to symptoms of anxiety and depression and three cognitive coping strategies, namely rumination, catastrophizing and self-blame. Furthermore, this study examined how these relations were different for men and women. The results of the MRA in the total group showed that self-compassion, catastrophizing and rumination were all significant predictors of the anxiety/depression total score. Additionally, the reporting of self-compassion and rumination were associated with less anxiety and depressive symptoms, in contrast to the reporting of catastrophizing, which was associated with more symptoms of anxiety and depression. The MRA by men and women separately showed that self-compassion was a significant predictor of the anxiety/depression total score in both men and women. In contrast to the model of men, catastrophizing was only in the model of women a significant predictor of the anxiety/depression total score.

The first aim of the current study was to examine how self-compassion is related to three cognitive coping strategies (rumination, catastrophizing and self-blame) and symptoms of anxiety and depression. In accordance with the expectations, outcomes of the MRA and bivariate correlations showed that more reported self-compassion was related to less symptoms of anxiety and depression and a lower anxiety/depression total score. This finding

is in line with previous research showing that higher scores on the SCS were consistently related to lower scores on various kinds of anxiety and depression self-report scales (Macbeth & Gumley, 2012; Neff, 2003b). Therefore, this study confirmed the theoretical idea of self-compassion as a probable 'more adaptive' cognitive coping strategy to diminish symptoms of anxiety and depression. In contrast to self-compassion, catastrophizing was a significant predictor of a higher anxiety/depression total score, according to the MRA. This corresponds to the expectations and previous research showing that catastrophizing was a theoretical 'less adaptive' strategy, which was related to more symptoms of anxiety and depression and a higher anxiety/depression total score (Garnefski et al., 2001). In terms of interventions, this finding provided additional evidence that this 'less adaptive' strategy should be unlearned to prevent anxiety and depressive symptoms.

In accordance to the expectations, results of the MRA showed that rumination was a predictor of the anxiety/depression total score. However, in contrast to the findings of the present study it was expected that rumination was a predictor of a higher anxiety/depression total score. The outcomes of the bivariate correlation also contradicted the expectations, with no significant correlation between the variables. Furthermore, MRA showed that self-blame was not a significant predictor of the anxiety/depression total score. However, results of the bivariate correlations showed that self-blame was significantly related to symptoms of anxiety and depression. So, the strength of the relation between the variables was significant, but selfblame had no significance influence on the anxiety/depression total score. Extant research described self-blame and rumination as significant predictors of anxiety and depressive symptoms, and examined significant bivariate correlations between self-blame, rumination and symptoms of anxiety and depression (Garnefski et al., 2002; Garnefski et al., 2001; Raes, 2010; Garnefski et al., 2004). For example, a study by Martin and Dahlen (2005) showed that anxiety and depression were predicted by self-blame and rumination. Further, the study showed that self-blame and rumination were positively correlated to measures of anxiety and depression (Martin & Dahlen, 2005). There is substantial evidence from earlier research describing that self-blame and rumination were significant predictors of more symptoms of anxiety and depression. Therefore, these unexpected results were possibly due to other mechanisms that may contribute to the findings. An example is an expression of a third factor that was not measured in this study, like personality traits or a history of anxiety or depressive disorders.

An alternative explanation for the finding that rumination was associated with a lower anxiety/depression total score might be found in how rumination was operationalized in the

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present study. Rumination was operationalized in this study as defined by Garnefski et al. (2001) "thinking about the feelings and thoughts associated with the negative event" (p. 1315). However, extant research identified two distinct components of rumination (Treynor, et al. 2003; Raes, 2010). Namely, reflection is defined by Raes (2010) "capturing emotionally neutral pondering", and brooding is defined by Raes (2010) "capturing self-critical moody pondering" (p. 758). Brooding is related to the development of depressive symptoms over time (Burwell & Shirk, 2007), likewise, it was associated with more depression in both concurrently and longitudinal analyses (Treynor, et al. 2003). This might suggest that the brooding factor of rumination was accounted for the substantial evidence that rumination was related to less symptoms of anxiety and depression. At the same time, the reflection factor of rumination was unrelated to concurrent depressive symptoms (Burwell & Shrink, 2007; Treynor, et al. 2003). In the present study, there was no distinction made in the operationalization of rumination between the reflection and the brooding component of rumination. Therefore, it might be possible that the reflection component of rumination was accounted for the finding in the current study that rumination was associated with less anxiety and depression symptomology. Future research should further examine the relation between rumination and anxiety and depressive symptoms, using rumination as operationalized in the present study, likewise, using rumination as operationalized in two distinct components.

The second aim of this study was to examine how the above-mentioned relations were different in men and women. Contrary to the expectations, results of the separate MRA's showed that the relation between self-compassion and the anxiety/depression total score was not significantly different in men and women. For both men and women, self-compassion was a predictor of anxiety and depressive symptoms. Furthermore, results of the bivariate correlation showed no significant differences between men and women on measurements of self-compassion. This contrasts with studies from Neff (2003b) and Raes (2010), which showed that women reported less self-compassion than men. The present study did not confirm the suggestion that gender affects the relation between self-compassion and symptoms of anxiety and depression. Therefore, interventions to improve self-compassion may not have to be different for men and women.

Results of the separate MRA's showed also that only the relation between catastrophizing and the anxiety/depression total score was significantly different in men and women. Only in women, the anxiety/depression total score was predicted by catastrophizing, not in men. This finding is in accordance with the expectation that men and women will differ in the relation between catastrophizing and the anxiety/depression total score. However, it

was also expected that men and women were different the relation between self-blame and rumination and the anxiety/depression total score. There were no significant differences in these relations between men and women. Likewise, results of the bivariate correlations showed no significant differences between men and women on measurements of self-blame. rumination and catastrophizing. These findings partially confirmed previous research. In contrast to the present study, previous research described differences between men and women in the reporting of catastrophizing and rumination: women reported to use more rumination and catastrophizing than men (Garnefski et al, 2004; Martin & Dahlen, 2005). However, the non-difference in de reported self-blame was confirmed in the present study. Extant research described no differences in the reporting of self-blame between men and women. (Garnefski et al, 2004; Martin & Dahlen, 2005). Furthermore, a study by Garnefski et al. (2004) found no difference between men and women in the relation between cognitive coping strategies and depressive symptoms. Therefore, the finding of the present study that men and women differ in the relation between catastrophizing and the anxiety/depression total score is, as far as known, new to the existing literature. In terms of intervention, it could be interesting to further examine this effect to enhance treatment for men and women who reported to use catastrophizing as a cognitive coping strategy.

The current study has at least three important limitations that required attention. Firstly, there were almost four times as many women in this study than men. In addition, almost all participants were from Dutch nationality and were highly educated. This is probably the case, because all participants are from the same GP practice in Utrecht. Future research might better sample from different GP practices to enhance the generalizability of the study with more variation in the sample population. Secondly, the measurements were based on online self-reported evaluations, which may have caused some bias. Because the participants fulfilled the survey in an uncontrolled environment in which they possibly were distracted, not concentrated or in a hurry to full in the questionnaire. This may influence the results of the questionnaire. More possible bias was caused by the self-reported evaluation, whereby, it is possible that participants evaluate themselves more positively or negatively than reality. Thirdly, a limitation of the present study was that the results were based on crosssectional data. The data was collected at one specific point in time, whereby, no conclusion could be drawn about the course or development of the reporting symptomology in time. This is limiting the degree to which the causal relationships in the present study can be inferred. For example, it is conceivable that self-compassion is not a predictor of anxiety and depressive symptoms, but that symptoms of anxiety and depression are a predictor of self-

compassion. Therefore, the interpretations of the results must proceed with caution. Future studies should perform a longitudinal design to follow the course and development of the measurements and to assure that, for example, the occurrence of self-compassion caused less symptoms of anxiety and depression.

Based on the present findings, a few other suggestions for future research could be made. Firstly, research should focus on attempting to replicate the finding of self-compassion as a significant predictor of less symptoms of anxiety and depression in a clinical sample. Especially in samples including people with anxiety and depressive disorders, this study should be replicated. It should be examined whether self-compassion has the same influence on anxiety and depressive symptomology. Extant research was looking at samples including people without serious symptoms of anxiety and depressive disorders. It would be interesting to examine if the same results are achieved in samples which include people with anxiety and depressive disorders. Secondly, it would be informative to examine in which situations people use more adaptive strategies, like self-compassion, and in which situations people use less adaptive strategies, like catastrophizing. Thirdly, since a lot of research has been done about less adaptive cognitive coping strategies and little is known about the more adaptive cognitive coping strategies, therefore, the focus of future research could be more on adaptive cognitive coping strategies, like self-compassion. Moreover, the focus could be on finding other more adaptive cognitive coping strategies, and their relations with less adaptive strategies and symptomology.

To conclude, whereas the current study has some limitations the results clearly confirmed previous research that self-compassion was associated with less symptoms of anxiety and depression, in contrast to catastrophizing, which was linked with more anxiety and depressive symptomology. Additionally, men and women were different in the relation between catastrophizing and anxiety and depressive symptoms. Unfortunately, the current study failed to find evidence for the hypotheses that rumination and self-blame were associated with more symptoms of anxiety and depression. Furthermore, self-compassion was a significant predictor of less anxiety and depressive symptoms for both men and women. This study suggest that self-compassion is a theoretical 'more adaptive' cognitive coping strategy and catastrophizing is a theoretical 'less adaptive' cognitive coping strategy. The results of this study provided additional evidence that this 'less adaptive' cognitive coping strategy, catastrophizing, should be unlearned to prevent anxiety and depressive symptoms. In contrast to this 'more adaptive' cognitive coping strategy, people could possibly learn this strategy, to diminish or prevent symptoms of anxiety and depression. In addition, the current study suggests that the intervention to learn and improve self-compassion may not have to be different for men and women. Ultimately, it is strived for that all people who suffer from anxiety and depressive disorders in the future will receive the best intervention possible.

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