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Self-compassion in the Relation to Treatment Outcome in Severe Somatoform Disorders: A Prospective Study

Master thesis Clinical and Health Psychology

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Abstract

Somatoform disorder (in the current diagnostic system 'somatic symptom disorder') is a group of disorders for which therapy not always proves to be successful, despite intensive and often costly interventions. Treatment outcome could perhaps be improved if patient characteristics that can predict treatment outcome are known. This knowledge could be used to customize treatment to these characteristics and to select patients for specific treatments. Self-compassion, a relatively new construct that has been linked to greater resilience, might hold both predictive- and therapeutic potential in the treatment of severe somatoform disorder. These patients generally have less self-compassion than the general population. The present study examines whether self-compassion can predict treatment outcome in severe somatoform disorder, and whether this effect is moderated by gender. Age is considered as a covariate in this study. A sample of 148 male and female patients diagnosed with somatoform disorder completed the Dutch versions of the *Self-Compassion Scale* (SCS; self-compassion), *Brief Symptom Inventory* (BSI; psychopathology*), Physical Symptom Checklist* (PSC; physical complaints*),* and the *Short Form 36* (RAND SF-36; mental and physical health). All participants received treatment in a specialized treatment centre, Altrecht Psychosomatics Zeist, the Netherlands. Multiple regression analyses showed that self-compassion and gender together account for 0.4% of the variation in psychopathology, 2.0% of the variation in physical complaints, 2.0% of the variation in mental functioning and 2.0% of the variation in physical functioning. None of the associations of self-compassion and gender with the treatment outcome on any of the variables were found to be significant. No interaction effect between self-compassion and gender was found. However, self-compassion was negatively correlated with levels of psychopathology and physical complaints, and in lesser extent positively correlated to mental health and physical health. In conclusion, the present research demonstrates that self-compassion does not predict treatment outcome in severe somatoform disorder. Also, gender does not predict treatment outcome or moderate the relationship between self-compassion and treatment outcome. Previous research findings regarding correlational effects between self-compassion and psychopathology, physical complaints, mental health, and physical health have been replicated, which supports the belief that self-compassion is a resilience factor in somatoform disorder.

Introduction

Somatoform disorders are a group of disorders for which therapy not always proves to be successful, despite intensive and often costly interventions. Lately, research suggests that self-compassion could be a potential modulating factor regarding treatment outcome in patients with severe somatoform disorder (van der Ven, 2015), since self-compassion has been linked with greater resilience (Neff & McGeehee, 2010; Leary, Tate, Adams, Allen & Hancock, 2007). This paper examines whether self-compassion can predict treatment outcome in severe somatoform disorder. If so, the likelihood of a positive treatment outcome could be increased by tailoring treatment to individual self-compassion scores, resulting in more cost-effectiveness.

Patients with somatoform disorder, in DSM-V known as somatic symptom disorder, are characterized by medically unexplained physical symptoms which cause clinically significant distress or impairment in daily functioning (DSM-IV-TR; American Psychiatry Association, 2000). Somatoform disorders lead to high levels of disability (Harris, Orav, Bates & Barsky, 2009) and functional impairment (de Waal, Arnold, Eekhof & van Hemert, 2004) and have been considered difficult to treat (Hahn, Thompson, Wills, Stern & Budner, 1994; Woivalin, Krantz, Mäntyranta & Ringsberg, 2004). Patients with chronic *severe* somatoform disorders often require treatment in tertiary care, because these patients are generally more impaired and have more comorbid psychiatric disorders than patients seen in primary care (van der Feltz-Cornelis, Hoedeman, Keuter & Swinkels, 2012). Comorbid psychiatric disorders include mood-, anxiety- and personality disorders (van der Boom & Houtveen, 2014). For patients with severe somatoform disorders, psychological treatment (Koelen et al., 2014) as well as intensive multidisciplinary tertiary care treatment has shown positive results (Houtveen, van Broeckhuysen-Kloth, Lintmeijer, Bühring and Geenen, 2015). However, treatment effects are moderate at best, and large inter-individual differences in treatment outcomes exist. In fact, results based on several outcome measures suggest that certain patients don't benefit at all (Houtveen et al., 2015).

Research suggests that pre-treatment patient characteristics can predict treatment outcome in several patient groups, including chronic pain patients (Thieme, Turk and Flor, 2007). Turk, Okifuji, Sinclair & Starz (1998) suggest that when patients are selected on predictive characteristics, and treatment is customized for these characteristics, treatment efficacy will enhance. Bongarts (2014) and Tijmann (2016) examined the predictive value of pre-treatment characteristics (e.g. 'acceptance' and 'psychological patient profiles', respectively) regarding treatment outcome in severe somatoform disorder. However, no

significant predictors emerged from these studies. Therefore, more research into possible predictors of treatment outcome is needed. Recently, attention has shifted towards self-compassion, a relatively new construct that might have predictive value because of its link with greater resilience (Neff & McGeehee, 2010; Leary et al., 2007).

According to Neff (2003a, 2003b), self-compassion involves treating yourself with care and concern when considering personal inadequacies, mistakes, failures, and painful life situations. The author proposes that self-compassion comprises three interacting components, with each an own counterpart: self-kindness versus self-judgment, common humanity versus isolation and mindfulness versus over-identification. Self-kindness involves being warm and understanding towards ourselves, rather than being critical. Common humanity involves recognizing that out suffering, failure and imperfections are normal, and are part of the human condition. Mindfulness involves turning toward our painful thoughts and emotions and seeing them as they are – without suppression or avoidance.

Recent research shows that patients with severe somatoform disorder generally have less self-compassion than healthy individuals (van der Ven, 2015). Results of this study showed that the majority of patients had 'very low' self-compassion scores, and only few patients had 'very high' self-compassion. Apparently, relatively more patients tend to be self-judgmental, feel isolated and be overly identified with negative thoughts or feelings (Neff's, 2003a, 2003b). This raise the question whether it's possible for uncompassionate people having a severe somatoform disorder to *really* benefit from treatment, and who will benefit most. To guide the hypotheses, a literature review was performed focusing on studies that included self-compassion. Web of Science was searched for prospective studies, including topics as "predictors", "determinants", "longitudinal" and "associates".

Instinctively, one might argue that uncompassionate states of mind like self-judgment, isolation and over-identification will almost certainly lead to negative consequences for the individual, especially when taking into account the many perceived failures, personal inadequacies and painful life situations patients with severe somatoform disorders have to confront daily. For example, for a person lacking in self-kindness, a simple remark made by a therapist might be conceived as being critical (e.g. "so you're saying it's my own fault, I should have known!"), impeding a therapeutic relationship to arise, possibly hampering a positive treatment outcome. Another example: without mindfulness, we suppress or avoid what is *really* going on. Can treatment effects be expected when reality is being avoided? Bishop et al. (2004) states that being overly identified with negative thoughts or feelings

(instead of being mindful of our suffering) might lead to aversive reactions. On the other hand, being more mindful allows for greater clarity, perspective and equanimity (Bear, 2003).

Self-compassion has been associated with many psychological health benefits. For instance, self-compassion has consistently been associated with well-being (Barnard & Curry, 2011; MacBeth & Gumley, 2012; Zessin, Dickhäuser and Garbade, 2015) by showing positive correlations between self-compassion and well-being. Moreover, some studies demonstrate causal effects of self-compassion on well-being (Zessin et al., 2015) by showing that an increase in self-compassion by both self-compassion manipulations (Adams & Leary, 2007; Leary et al., 2007) and self-compassion interventions (Neff & Germer, 2013; Smeets, Neff, Albers and Peters, 2014) leads to an increase in well-being. Second, self-compassion has also been linked to a greater positive psychological functioning, like happiness, optimism and positive affect (Neff, Rude & Kirkpatrick, 2007; Neff & Vonk, 2009). Self-compassion is also associated with better coping skills (Neff, Hsieh & Dejitterat, 2005) and with greater resilience (Neff & McGehee, 2010). According to Leary and colleagues (2007), self-compassion facilitates resilience by moderating people's reactions to negative events, acting as a buffer against negative self-feelings.

On the other hand, a lack of self-compassion has been associated with many psychological disadvantages. For example, low levels of self-compassion have been associated with rumination, thought suppression, and avoidance-oriented coping strategies (Neff, 2003b; Neff et al., 2005; Neff, Kirkpatrick, & Rude, 2007; Neff & Vonk, 2009; Raes, 2010; Thompson & Waltz, 2008). Leary et al. (2007) found that people who are low in self-compassion demonstrated more extreme reactions, more negative emotions and less accepting thoughts. Lower self-compassion is also associated with less activity engagement and acceptance of pain (Costa & Pinto-Gouveia, 2011; 2013). These findings support the belief that self-compassion is negatively correlated with emotion regulation difficulties (Neff, 2003b). Besides lacking in psychological health benefits, research shows that from a group of severe somatoform disorder patients, those patients with less self-compassion also have more physical symptoms compared with patients with higher levels of self-compassion (Groen, 2014; van der Ven, 2015). Houtveen et al. (2015) argues that initial levels of physical impairment may have an effect on treatment outcome.

A recent meta-analysis showed that the chance of having medically unexplained symptoms is two times bigger for females than for males (Koelen et al., 2014). This study demonstrate that 66% of all patients who were included in this study was female. In the study by Van der Ven (2015) 78.2% of all patients was female. Research shows that gender is a

critically important moderator of psychopathology (Phillips, Menard & Fay, 2006). Bekker and van Mens-Verhulst (2007) suggest that treatment outcome might be improved when gender differences are taken into consideration. Moreover, it has been found that females have slightly lower self-compassion than males (Neff, 2003; Neff & McGehee, 2010; Yarnell et al., 2015). Therefore, the variable gender is taken into consideration as a possible moderator in this study.

The aim of the current study is to examine whether self-compassion can predict treatment outcome for patients with severe somatoform disorder. The research observed raise an important question regarding which patients are most likely to benefit from treatment. In sum, it can be stated that low self-compassionate individuals lack psychological advantages, and are more prone to disadvantages. It seems that less self-compassionate individuals are less well equipped to deal with life stressors than more self-compassionate individuals, which is in accordance with research on resilience (Neff & McGeehee, 2010; Leary et al., 2007). Therefore, it is expected that patients with lower levels of self-compassion have worse treatment outcome than more self-compassionate patients. Furthermore, it is examined whether gender is a moderator in the relationship between self-compassion and treatment outcome. Because in general women have less self-compassion than man (Neff; 2003; Neff & McGehee, 2010), gender is expected to moderate the relationship between self-compassion and treatment outcome. Age is considered as a covariate in this study.

Methods

Participants

Participants were patients at Altrecht Psychosomatic Medicine, a specialised tertiary care treatment centre in Zeist, The Netherlands. The main treatment inclusion criterion was the presence of a somatoform disorder as the primary disorder, according to DSM-IV-TR criteria (APA, 2000). Not treated at the centre are patients with diagnosis of hypochondriasis or body dysmorphic disorder; diagnosis of addiction, bipolar disorder, or psychosis; crisis situations requiring immediate attention; and patients under treatment by a specialized physician outside the centre. Table 1 shows a brief summary of the main characteristics of participants who participated in the study, including age and self-compassion.

Table 1

Main characteristics of participants by gender

	N (%)	Mean	Standard deviation	Minimum	Maximum
Age					
Men	37 (25%)	42.9	9.0	27	64
Women	111 (75%)	40.7	12.6	18	68
Total	148 (100%)	41.3	11.8	18	68
Self-compassion (total score)					
Men	37 (25%)	86.7	25.2	55	138
Women	111 (75%)	80.2	20.3	35	134
Total	148 (100%)	81.8	21.7	35	138

Procedure

Measurements were part of the Routine Outcome Measurement (ROM) at Altrecht Psychosomatic Medicine, which takes place once during the registration phase and once after treatment was finished, and had already been done before the start of the current study. The measurements included the *Brief Symptom Inventory* (BSI), the *Physical Symptom Checklist* (PSC), and the Short Form-36 (*RAND SF-36)*. Patients were invited by a psychologist in training to fill out the questionnaires. When a patient failed to complete the entire ROM in time, the remaining questionnaires were filled out at home. The amount of time between the first ROM (baseline) and the second ROM (post-test) differed for every patient (min. = 95 days; max. = 1605 days). The *Self-Compassion Scale* (SCS) was assessed once. Preferably, this would have taken place approximately at the same time as the baseline. However, SCS scores were assessed anywhere between registration phase and the end of treatment. Specifically, 55 people filled out the SCS before the start of the baseline (37.9%), 66 people between baseline and halfway treatment (45.5%) and another 24 people after treatment was halfway over (16.6%). Patients who did not complete the SCS were excluded from the study.

Materials

To measure self-compassion, the 24-item Dutch translation of the Self-Compassion Scale (SCS; Neff, 2003a; Neff & Vonk, 2009) was used. This scale assesses six aspects of self-compassion: Self-Kindness (e.g., ‘‘I try to be understanding and patient toward aspects of my personality I don’t like’’), Self-Judgment (e.g., ‘‘I’m disapproving and judgmental about my own flaws and inadequacies’’), Common Humanity (e.g., ‘‘I try to see my failings as part of the human condition’’), Isolation (e.g., ‘‘When I think about my inadequacies it

tends to make me feel more separate and cut off from the rest of the world''), Mindfulness (e.g., ''When something painful happens I try to take a balanced view of the situation''), and Over-Identification (e.g., ''When I'm feeling down I tend to obsess and fixate on everything that's wrong.''). Items are rated on a five-point Likert scale, ranging from 1 (almost never) to 5 (almost always). After reversing the negatively formulated items, a total self-compassion score can be calculated. This total score ranges from 24 to 120, with higher scores indicating more self-compassion. Despite good internal consistency, construct validity, test-retest reliability and discriminant validity (Neff, 2003b), common use of the SCS total score as an overall indicator of self-compassion has been criticised (López et al., 2015). Though, research by Neff (2015) reassured that the SCS remains a valid and theoretically coherent measure of self-compassion. Therefore, in the present research the total self-compassion score was used. The internal consistency of the total SCS scores was examined (Cronbach's α coefficient .82).

To measure psychopathology, the general psychopathology scale of the Dutch version of the Brief Symptom Inventory (BSI; de Beurs, 2009; Derogatis, 1993) was used. This scale exists of 53 items, including: somatic symptoms (7 items), cognitive disorders (6 items), interpersonal sensitivity (4 items), depressive symptoms (6 items), anxiety (6 items), hostility (5 items), phobic anxiety (5 items), paranoid thoughts (5 items), and psychoticism (5 items). The internal consistency of the BSI has been found to be very good (Cronbach's α coefficient .96) (de Beurs & Zitman, 2006).

To measure physical complaints, the Physical Symptom Checklist (PSC; van Hemert, de Waal & van Rood, 2003) was used. The PSC consists of 51 items about physical complaints and includes all somatic symptoms listed in the DSM-IV-TR (APA, 2000). The score on the PSC gives an indication of the severity of the physical symptoms of the respondent. The internal consistency of the PSC has been found to be good (Cronbach's α coefficient .88) (de Waal, Arnold, Spinhoven, Eekhof, Assendelft & van Hemert, 2009).

To measure both physical and mental health, the Short Form-36 (RAND SF-36; Hays & Morales, 2001) was used. The SF-36 measures "subjective well-being" or "health related quality of life" in the form of experienced limitations. For the purpose of the current study the scoring method of Hays was used, which derives weighted subscale scores based on Item Response Theory and composite scores based on oblique factor analysis allowing the composite scores to be correlated, which gives a realistic representation of health factors (van Middendorp, Kool, van Beugen, Denollet, Lumley & Geenen, 2015). The SF-36 consists of two health composites and eight subscales, on which higher scores indicate better health

status. The Physical Health Composite of the SF-36 (Hays & Morales, 2001) was used as the primary outcome measure for physical health status. This includes the subscales 'Physical functioning', 'Role limitations due to physical health problems', 'Pain' and 'General health perceptions'. The Mental Health Composite of the SF-36 (Hays & Morales, 2001) was used as the primary outcome measure for mental health status, including the subscales 'Emotional well-being', 'Role limitations due to emotional problems', 'Social functioning' and 'Energy/fatigue'. Internal consistency of both the Physical Health Composite and Mental Health Composite were good (Cronbach's α coefficient .87 and .86, respectively) (van Middendorp et al., 2015).

Design and data analysis

Design. The present study involves a prospective correlational study in which it will be examined if self-compassion and gender can predict treatment outcome. Treatment outcome is measured by four dependent variables, including the BSI, PSC and both mental and physical health composites of the SF-36. The variable self-compassion is continues.

Data analyses. Statistical analyses were performed using IBM SPSS Statistics version 23.0. All test were two-tailed and statistical significance was considered for $p < .05$. Age was considered a covariate in this study. To control for age differences between men and women, an Analysis of Variance (ANOVA) was conducted, which showed no significant effect: $F(1,146) = .962$, $p = .33$. The variable gender was coded (0 = man, 1 = woman). Because self-compassion scores were assessed anywhere between registration phase and end of treatment, it might have been that self-compassion scores were influenced by treatment for patients who assessed the SCS after treatment had begun. Therefore, a new variable was computed in which number of days between baseline and SCS was divided by the total number of days between baseline and post-test, resulting in a scale on which 0 was equivalent to the time of the baseline and 100 was equivalent to the time of the post-test. To control for possible influence of treatment on SCS scores, an Analysis of Variance was conducted ($F(1,143) = .01$, $p = .91$), which showed no consistency between treatment effects and time of SCS assessment. Therefore, the total SCS score was used for further analyses. An interaction variable for gender and self-compassion was computed (gender x self-compassion). Descriptive analyses were conducted in order to examine the data. Missing values were detected by checking the frequencies of all variables. There were no missing values. Now, the data was ready to be analysed. First, a General Linear Model was used for examining

differences between baseline scores and post-test scores on each outcome measure. Next, Pearson correlation coefficients between self-compassion scores and the outcome measures were examined. Also, an Analyse of Variance was conducted to examine the differences in self-compassion between men and women. Before continuing to answer the main research question, assumptions for multiple regression analyses were checked, including independence of residuals, Cook's distance, Multicollinearity and Normal P-P plots. The Durbin-Watson statistic was found to be close to 2.0 for every outcome measure, which is considered to show independence of residuals. The maximal Cook's distance was .31 and thus never exceeded 1, which showed that there were no outliers. Multicollinearity was inspected by Tolerance/VIF values (VIF = 1.0). Last, the residuals of all outcome variables were approximately normally distributed. Now, to test the predictive value of self-compassion and gender for treatment outcome, multiple regression analyses was performed. Baseline outcome variables were entered in block 1, followed by the covariate age (block 2), self-compassion and gender (block 3) and the self-compassion x gender interaction (block 4).

Results

Effect of treatment

A General Linear Model was used in order to examine differences between baseline-scores and post-test scores. The results are showed in table 2. No significant differences between baseline scores and post-test scores were found. Psychopathology: F (1,126) = 1.55, p = .22, partial η^2 = .01. Physical complaints: F (1,101) = .14, p = .71, partial η^2 = .001. Mental health: F (1,88) = 2.0, p = .16, partial η^2 = .022. Physical health: F (1,88) = .20, p = .66, partial η^2 = .002.

Table 2

Mean scores (M) and standard deviations (SD) at baseline and post-test measurements and their mean differences (change), for each of the four outcome variables

		Baseline		Post-test		Change
Variable	***N***	***M***	***SD***	***M***	***SD***	***M***
Psychopathology						
Men	33	1.0	.7	.9	.7	-.1
Women	96	1.2	.6	1.1	.7	-.1
Total	129	1.1	.6	1.1	.7	-.1

Physical Complaints						
Men	25	15.1	7.9	12.7	8.1	-2.4
Women	79	16.3	7.9	16.0	8.0	-.3
Total	104	16.0	7.8	15.2	8.1	-.8
Mental functioning						
Men	22	35.3	5.1	36.1	5.4	.7
Women	69	33.5	4.3	34.6	4.9	1.1
Total	91	34.0	4.5	34.7	5.0	1.0
Physical functioning						
Men	22	32.7	7.8	34.7	9.1	2.1
Women	69	29.5	5.3	31.4	6.3	1.8
Total	91	30.3	6.1	32.2	7.2	1.9

Note. A reduction of psychopathology and physical complaints reflects a positive treatment effect, whereas a reduction of mental- and physical functioning reflects a negative treatment result. No mean change score was significant.

Correlations

Pearson correlation coefficients between self-compassion scores and the outcome measures at baseline were significant. For instance, self-compassion was negatively correlated with pre-treatment psychopathology (r = -.53, p <.001) and pre-treatment physical complaints (r = -.39, p <.001), and positively correlated with pre-treatment mental health (r = .18, p <.05) and pre-treatment physical health (r = .21, p <.05). Furthermore, self-compassion was also negatively correlated with post-treatment psychopathology (r = -.42, p <.001) and post-treatment physical complaints (r = -.32, p <.001), and positively correlated with post-treatment mental health (r = .20, p <.05) and post-treatment physical health (r = .22, p <.05).

Multiple Regression Analysis

A multiple regression analysis was performed to test whether the model is successful in predicting treatment outcome. Table 3 shows the results of the analyses for each of the outcome measures.

Table 3

Results of a hierarchical multiple regression analyses predicting treatment outcome from baseline (block 1), age (block 2), self-compassion and gender (block 3) and the self-compassion-gender interaction (block 4)

	Psycho-pathology (BSI)		**Physical complaints (PSC)**		**Mental health (SF-36)**		**Physical health (SF-36)**	
Variable	β	Adj. R^2	β	Adj. R^2	β	Adj. R^2	β	Adj. R^2
Block 1		**.43*** **		**.48*** **		**.13*** **		**.37*** **
Baseline	.66***		.67***		.37***		.61***	
Block 2		**.43**		**.44**		**.14**		**.36**
Baseline	.67***		.68***		.39***		.61***	
Age	-.07		-.02		.15		-.01	
Block 3		**.43**		**.45**		**.14**		**.36**
Baseline	.63***		.64***		.35**		.57***	
Age	-.06		-.01		.15		-.01	
SC (SCS)	-.07		-.06		.14		.10	
Gender	.02		.13		-.06		-.07	
Block 4		**.43**		**.45**		**.14**		**.37**
Baseline	.63***		.65***		.38**		.58***	
Age	-.06		-.02		.15		-.01	
SC (SCS)	.06		-.14		.07		.29	
Gender	.40		-.08		-.24		.39	
SC*gender	-.40		.23		.19		-.50	

Note: * p <.05, ** p < .01, *** p<.001

BSI: Brief Symptom Inventory; PSC: Physical Symptom Checklist; SF-36: Health-Related Quality of Life (HRQoL) survey instrument; SC: Self-compassion; SCS: Self-compassion Scale.

Baseline

The proportions of variances explained by baseline test scores (block 1) were all significant. Psychopathology: ΔR^2 = .43, ΔF (1,127) = 97.53. p <.001. Physical complaints: ΔR^2 = .45, ΔF (1,102) = 84.23, p = <.001. Mental health: ΔR^2 = .14, ΔF (1,89) =14.0, p = <.001. Physical health: ΔR^2 = .37, ΔF (1,89) = 52,83, p = <.001.

Self-compassion and gender

After controlling for baseline-test scores (block 1) and age (block 2), block 3 shows the change in the proportion of variance explained by self-compassion and gender for each of the outcome measures. For psychopathology, physical complaints, mental health and physical health, the change in the proportion of variance explained by self-compassion and gender is ΔR^2 = .004, ΔR^2 = .02, ΔR^2 = .02 and ΔR^2 = .02, respectively. For none of the outcome measures is the change in the amount of variance explained significant. Psychopathology: ΔF

(2,124) = .46, p = .63. Physical complaints: ΔF (2,99) = 1.89, p = .16. Mental health: ΔF (2,86) = 1.22, p = .30. Physical health: ΔF (2,86) = 1.05, p = .36.

Interaction effects

No interaction effects were found between self-compassion and gender in relation to the outcome variables. Psychopathology: ΔR^2 = .01, ΔF (1,123) = 2.50, p = .12. Physical complaints: ΔR^2 = .00, ΔF (1,98) = .66, p = .42. Mental health: ΔR^2 = .00, ΔF (1,85) = .21, p = .65. Physical health: ΔR^2 = .12, ΔF (1,85) = 2.90, p = .15.

Differences in self-compassion between men and women

Analysis of variance showed that the differences in self-compassion between men (M = 86.73, SD = 25.23) and women (M = 80.18, SD = 20.31) was not significant, F (1,146) = 2.55, p = .11.

Discussion

The current study examined whether self-compassion could predict treatment outcome in severe somatoform disorder, and whether gender might function as a moderator in this relationship. It was hypothesized that low self-compassionate patients would benefit less from treatment than patients with higher self-compassion scores. Second, it was expected that gender moderate the relationship between self-compassion and treatment outcome. Neither self-compassion nor gender was found to predict the outcome of therapy. Also, gender did not moderate the relationship between self-compassion and treatment outcome.

The current research first of all shows that, regardless of self-compassion scores, very small changes in outcome measures exist. In fact, no significant differences between baseline scores and post-treatment scores were found. Severe somatoform disorder patients do not seem to profit much from treatment. Professionals of both mental and medical discipline already described somatoform disorder patients as hard to treat (Hahn et al., 1994; Hahn, 2001; Woivalin et al., 2004). Houtveen et al. (2015) observed inter-individual differences in the effects of treatment, showing the unresponsiveness to treatment for some patients. Current results suggest the apparent untreatable nature of this group of somatoform disorder patients that is only admitted to therapy when treatment elsewhere failed. At the same time, the lack of effect justifies the existence of the present research. The lack of convincing treatment effects gives reason to search for predictors in order to improve treatment success in severe somatoform disorders.

Furthermore, correlation coefficients showed that higher levels of self-compassion are associated with less psychopathology and physical complaints, and better mental and physical health. These findings are in accordance with previous research of Groen (2014) and van der Ven (2015) and support the belief that self-compassion is associated with well-being (Barnard & Curry, 2011; MacBeth & Gumley, 2012; Zessin et al., 2015). Considering the negative correlations between self-compassion and emotion regulation difficulties, rumination, thought suppression, and avoidance (Neff, 2003b; Neff et al., 2005; Neff, Kirkpatrick, & Rude, 2007; Neff & Vonk, 2009; Raes, 2010; Thompson & Waltz, 2008) and the finding that self-compassionate people have better coping skills (Neff et al., 2005), it can be argued that the relationship between self-compassion and the current outcome measures is indirect rather than a direct one. For example, less self-compassionate individuals do not have more psychopathology because they have less self-compassion, but because these individuals cannot cope effectively with life stressors as a result of low self-compassion. In conclusion of our findings, patients with self-compassion have less psychopathology and physical complaints, and better mental and physical health, presumably because self-compassion acts like a buffer against negative events. This is in accordance with previous research (Leary et al., 2007). Although it is also possible that better functioning is the cause of higher self-compassion, these findings contribute to the belief that self-compassion is a resilience factor (Neff & McGeehee, 2010).

There are several reasons that might explain why our hypotheses were not met. First, there are some doubts regarding the validity of the outcome measures used in this study. It might be that the outcome measures are not sensitive enough, so they cannot accurately measure changes that reflect individual treatment success. Rief and Hiller (2003) suggested using the Screening for Somatoform Symptoms-7 (SOMS-7), a sensitive instrument that they found to be both reliable and valid for the evaluation of treatment effects in patients with somatoform disorder.

Second, as mentioned before, patients hardly improved. In order to determine whether self-compassion predicts treatment outcome, it could be argued that there should have been improvements in treatment outcome in the first place. Theoretically, the mean differences and standard deviations between baseline- and post-test may be too small to differentiate for a treatment effect of low versus high self-compassion scores. However, self-compassion showed very little explanatory power, so this cannot be the case. Seen the results it can be argued that on average patients are treatment resistant. This is supported by post-treatment correlations. As with baseline correlations, post-treatment correlations between self-

compassion and outcome measures are significant. This suggest that regardless of self-compassion scores and despite treatment, somatoform disorder patients still have more psychopathology, physical complaints, and less mental and physical health. Research suggests that somatization in patients with severe somatoform disorders is permanent, must be accepted and is not sensitive to treatment (van der Feltz-Cornelis, Swinkels, Blankenstein, Hoedeman & Keuter (2011). Despite other factors that also influence treatment outcome such as therapeutic relationship (Shirk & Karver, 2003), treatment resistance could be part of a theoretical explanation why in the current study, self-compassion could not predict treatment outcome.

Another argument is that the current research did not examine changes in self-compassion scores during treatment period. Research on compassion training (e.g. Compassion-focused Therapy: Gilbert, 2009; Mindful Self-compassion Program: Neff & Germer, 2013) showed that one could learn to be more self-compassionate, thereby alleviating emotion dysregulation (Gilbert & Proctor, 2006). Participants in this study received Acceptance and Commitment Therapy (ACT), a therapy in which patients learn to be mindfully aware in the present moment. Mindfulness is also one of the three components in self-compassion. If during treatment self-compassion would increase by enhanced mindfulness, treatment outcome would likely be affected. Although self-compassion can changes over time, current research only examined self-compassion scores at the beginning of treatment. To examine whether chances in self-compassion influence chance in treatment outcome, repeated assessment of self-compassion is required. A hypothesis could be that changes in treatment outcome could be mediated by changes in self-compassion.

Finally, a reason why the moderator hypothesis was not met could be that there was no difference in self-compassion scores between men and women. Although research found that females have lower self-compassion than males (Neff, 2003; Neff & McGehee, 2010; Yarnell et al., 2015) this was not found in current study. Because of this, the relation between self-compassion and treatment outcome might not have differed for men and women.

Suppose abovementioned arguments are not the case, and the results are correct indeed. This raise the question what the clinical meaning of the conclusion would be. If self-compassion cannot predict treatment outcome in severe somatoform disorder, enhancing self-compassion in order to affect treatment outcome alone might also be ineffective (which should be investigated). Moreover, differentiation and selection between self-compassionate and less self-compassionate individuals in order to achieve better results in therapy will likely not result in better therapy outcomes, let alone be time consuming. Moreover, it can be

argued whether it's right for mental health practices to enhance self-compassion in low self-compassionate individuals and not in self-compassionate individuals. If the goal is to improve self-compassion for any reason but to improve treatment outcome, all patients should be allowed to benefit from self-compassion training on grounds of equality. However, if treatment outcome is not the goal, the necessity of self-compassion training as a whole should be questioned. Despite the importance, this question goes beyond the focus of current research and therefore could not be answered.

Current research has some limitations. First, the researchers had no choice regarding which outcome measures to work with, since data collection had already been done. The current measures have shown to be cumbersome, and do not fit in well with the target audience (Houtveen et al., 2015). Therefore, these measurements possibly don't reflect actual treatment outcome. Second, although all patients received multidisciplinary treatment developed for chronic severe somatoform disorder and comorbid psychiatry disorders in tertiary care practice with a focus on body-related mentalization skills, ACT, cognitive behavioural modulation and involvement of the family system, it is unknown which specific treatment each participant has received. Also, the frequency and the duration of the treatment can differ. Although treatment specifics might differ, the patient group is assumed to be heterogeneous. Therefore, difference in treatment should barely have an overall effect.

In the treatment of severe somatoform disorders at Altrecht Psychosomatic Medicine, most of the patients receive a standard package of combined multidisciplinary treatments. This package is rather comprehensive and is considered to be most effective when all different treatments are applied. In view of the results, a recommendation for future research would be to examine whether more personalized care packages, in which each individual would only receive those therapies which best suit their needs, would provide better treatment outcome. Hopefully, severe somatoform disorder patients will one day be treated more effectively, no matter what intensive and costly intervention.

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