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Effects of a brief self-compassion exercise on positive and negative affect in individuals with a personality disorder

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Abstract

Introduction*:** Individuals with a personality disorder are often confronted with negative affect and self-criticism, which are major risk factors for self-harming behavior and poorer treatment outcomes. Research indicates that enhancing self-compassion could reduce self-criticism and negative affect and could increase positive affect. As only few studies focus on individuals with a personality disorder, this research is aimed at investigating the immediate effects of a brief self-compassion exercise, compared to a neutral exercise, on positive and negative affect in individuals with a personality disorder. Moreover, it is investigated whether self-criticism moderates the relationship between the self-compassion exercise and affect. ***Methods*:** The study was conducted as a cross-over experiment. Twenty-four participants, all diagnosed with a personality disorder, were equally distributed among two groups. Both groups took part in a ten-minute self-compassion group exercise and in a neutral exercise, in reverse order. The study included different assessment time points. Baseline levels of self-criticism were measured by the Forms of Self-criticizing/attacking and Self-reassuring Scale (FSCRS). Positive and negative affect was measured in a direct way with the Positive and Negative Affect Schedule (PANAS) and in an indirect way with the Implicit Positive and Negative Affect Test (IPANAT). In order to analyze the data, multiple t-tests and moderation analyses were conducted. ***Results: The results showed that participants reported significantly lower levels of negative affect measured indirectly (IPANAT) after the self-compassion exercise compared to neutral exercise; $d = .46$, 95% CI [-1.14, -.05], $p = .033$. Apart from that, there were no significant effects of the self-compassion exercise on positive or negative affect in the individuals, relative to the neutral exercise. Furthermore, the effects of the self-compassion exercise on positive and negative affect were not moderated by self-criticism. ***Conclusion:*** The current study revealed no effects of the self-compassion exercise, compared to the neutral exercise, on positive affect and mixed findings for negative affect. Further research on the effectiveness of other forms and durations of self-compassion exercises for individuals with a personality disorder is recommended.

Keywords: self-compassion, personality disorder, self-criticism, affect

Content

Introduction

During the past decades, increased attention has been drawn to the concept of self-compassion and its beneficial effects on mental health. Multiple research studies suggest favorable correlations between self-compassion and various outcomes, like self-criticism, depression or well-being, and emphasize the value of increasing self-compassion (e.g. Neff, Kirkpatrick & Rude, 2007). The current paper focuses in particular on beneficial effects of self-compassion on positive and negative affect in individuals with a personality disorder.

Personality Disorder

We all differ from each other in the way we feel, think and behave. These individual characteristics make us unique and form what we call a 'personality' (Fiedler, 2009). But, when this personality leads to suffering and impairment, is rigid and therefore not adjustable to external circumstances, it is possible that a personality disorder has developed (Fiedler, 2009; American Psychiatric Association [APA], 2013). A personality disorder is a relatively common mental disorder, with a prevalence rate between 6.7% and 14.6% in the general population and about 40% in the psychiatric population (Doering & Sachse, 2008). In order to clinically assess the diagnosis, different approaches are available. The following description is based on the definition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V). Based on this approach, a personality disorder is defined by a cognitive, affective and/or behavioral pattern that causes distress and impairment and that deviates significantly from the normative standards of the individuals' culture. The pattern is described as stable and inflexible, it is consistent over different situations and persistent over time. Moreover, personality disorders have their onset in adolescence or early adulthood. The deviating pattern cannot be better interpreted as a consequence of another mental disorder, medical disorder or of substance use. In addition to the general description, the DSM-V provides specific diagnostic criteria for different types of personality disorders. Based on similar characteristics, they can be sorted into three clusters. Cluster A comprises paranoid, schizoid and schizotypal personality disorders. Cluster B contains antisocial, borderline, histrionic and narcissistic personality disorders and Cluster C includes avoidant, dependent and obsessive compulsive personality disorders (APA, 2013).

Individuals meeting the criteria of a personality disorder encounter various challenges in life, such as distress and impairment (e.g. APA, 2013). Many individuals with a personality disorder share a history of emotional and/or physical abuse and neglect, which is assumed to be a major risk factor for developing a personality disorder (Doering & Sachse, 2008; Samuels, 2011). Personality

disorders are often accompanied by other psychiatric disorders, especially by mood and anxiety disorders. Furthermore, personality disorders are associated with criminal and violent behavior (Samuels, 2011). Moreover, the experience of negative affect is a frequently occurring symptom. To be more specific, negative affectivity has been found to be one of the most occurring personality dimensions among a variety of personality disorders (Saulsman & Page, 2004). Furthermore, individuals with a personality disorder are associated with increased self-harming and suicidal behavior. Between 23-55% of all patients that are assigned to treatment after intentional self-harm and almost 30% of all suicide attempts are conducted by individuals with a personality disorder. Negative affect, in turn, has found to be one of the risk factors of intentional self-harm in individuals with a personality disorder (Turner, Jin, Anestis, Dixon-Gordon & Gratz, 2018).

The Role of Affect

The experience of negative affect is part of the symptomology across different types of personality disorders (APA, 2013; Saulsman & Page, 2004). It includes negative emotions, such as anxiety, anger, guilt or shame and their expression in interpersonal functioning and behavior, for instance in self-harm (APA, 2013). Borderline personality disorder is particularly associated with an increased level of negative emotions, such as depression, anger and self-hatred (Linehan, Kanter & Comtois, 1999). But also individuals with other personality disorders are characterized as showing greater levels of negative emotions, like guilt and shame (Lucre & Corten, 2012). Besides higher levels of negative affect, different studies also point to lower levels of positive affect in individuals with a borderline personality disorder (e.g. Domes et al., 2006; Dukalski, Quirin, Kersting, Suslow & Donges, 2017). Positive affect comprises feelings of energy, enthusiasm and alertness (Watson, Clark & Carey, 1988) and is associated with a variety of beneficial outcomes. The experience of positive affect can broaden cognition and behavior, because it promotes creative and flexible thought patterns and increases the awareness of different possibilities to act. Furthermore, positive affect facilitates psychological resilience, which helps individuals to cope with difficult life events. Finally, the experience of positive emotions is considered to ease the effects of negative emotions and enhances psychological well-being (Fredrickson, 2001). Except for borderline, there seems to be a lack in research investigating the level and effect of positive affect in individuals with a personality disorder.

Yet, facilitating positive affect in individuals with a personality disorder seems to be a valuable aim for treatment, given the beneficial effects on negative emotions, on coping with life stressors and on well-being.

Self-Criticism

Another common characteristic among different personality disorders is the experience of self-criticism, which is assumed to be resulting from adverse childhood memories. Self-criticism is a way to react in a moment of failure or setbacks (Lucre & Corten, 2012). It can be described as a negative evaluation of the self, whereby judgement can be directed at various features, like appearance, personality or thoughts (Longe et al., 2010). Gilbert, Clarke, Hempel, Miles and Irons (2004), suggest different forms and functions of self-criticism. They especially distinguish two components, 'inadequate self' and 'hated self'. The first component of self-criticism is related to feelings of inadequacy and is aimed at improving the self and at preventing future mistakes. The other component is associated with feelings of self-hate and disgust and is aimed at attacking and hurting the self (Gilbert, Clarke, Hempel, Miles & Irons, 2004).

Different studies found a link between self-criticism and depression, anxiety or self-harm. It is also related to shame and other strong negative emotions, for instance disgust and anger. These associations might be a reason for the pathological character of self-criticism. Furthermore, self-criticism is linked to poorer outcomes of psychotherapeutic treatment and interventions (Baião, Gilbert, McEwan & Carvalho, 2015). Moreover, self-criticism is associated with impairments in interpersonal relationships (Gilbert et al., 2004), which again is a challenge in psychotherapy for individuals with a personality disorder (Colijn, Cnossen & Haringsma, 2014).

All in all, it seems worthwhile to investigate in approaches that address self-criticism, in order to improve treatment outcomes and to reduce negative emotions and self-harm. A possible way to address self-criticism is to offer de-shaming information to patients about self-criticism and adverse experiences (Lucre & Corten, 2012), or to strengthen the ability to reassure the self in times of setback and failure, instead of reacting with self-criticism (Gilbert et al., 2004).

Self-Compassion

In the context of factors that can help to increase psychological health, various findings demonstrate a positive association of self-compassion with positive affect, well being and life-satisfaction, and a negative association with self-criticism and negative affect (Neff et al., 2007). Self-compassion is a centuries-old concept, imbedded in Buddhism and other Eastern philosophy. For some time now, it is getting more attention in Western psychology, in terms of research, treatment and the understanding of mental well-being. Broadly speaking, self-compassion can be understood as a compassionate attitude towards the self. It involves recognizing one's own suffering and weaknesses and interpreting them as normal features in life.

Instead of being self-critical and judgmental, it means treating the self with kindness in times of misery. Being self-compassionate reduces the need for comparison and supports feelings of connectedness. The lack of self-compassion, on the other hand, can lead to refusal and negative emotions, self-worth is defined by the absence of failure and suffering. As a consequence, self-criticism and judgment increases, which are predictors for mental health problems (Neff, 2003). There are different approaches available to cultivate self-compassion in individuals, like Compassionate Mind Training or Gestalt Two-Chair interventions (Barnard & Curry, 2011).

Compassion Focused Therapy (CFT) is another approach, that is particularly designed for people with increased feelings of shame and self-criticism and that seems promising of enhancing well-being (Lucre & Corten, 2012). CFT is a multimodal approach, developed by Paul Gilbert. It incorporates different elements, like psycho-education and various exercises to raise self-compassion (Gilbert, 2013). The conception of CFT is i.a. based on evolutionary knowledge about our affect regulation systems, whereby it focuses on the following three specific systems. The most dominant affect regulation system is the threat and protection system, that is responsible for tracing threat sources and evoking reactions, like negative emotions of fear and anger. The second system, the drive system, stimulates us to seek for sources of pleasure and joy that are linked with well-being and wealth. But, the drive system is also involved in competitive and dominating behavior. The contentment system, on the other hand, is related with positive emotions that are not obtained by activation, like striving or threat, but by calmness, reassurance and safeness. The contentment system activates the parasympathetic nervous system and the release of endorphins. This system can be seen as a regulation of the other two systems, that can lead to feelings of calmness and a state of well-being (Gilbert, 2014). Individuals with traumatic experiences are known to have difficulties to engage in a compassionate and calm state because it can evoke hurtful memories (Gilbert, 2014), which can lead to the conclusion that the contentment system is less active in individuals with a personality disorder. Also, it was found that self-criticism is associated with difficulties to produce warm and self-compassionate images (Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006). Indeed, in a comparison with other mental health disorders, like anxiety disorder, the borderline personality disorder group presented the lowest scores on self-compassionate attitude (Costa, Marôco, Pinto-Gouveia, Ferreira & Castilho, 2015). Instead, one can assume that the threat system is highly active in individuals with a personality disorder, because self-criticism promotes the activation (Gilbert, 2014). One aim of CFT is to facilitate self-compassionate skills in individuals and increase the activation of the contentment system, by different self-compassion promoting exercises (Gilbert, 2009).

There are different studies that confirm positive effects of self-compassion promoting approaches. For instance, a three week loving-kindness and compassion meditation program with individuals diagnosed with borderline personality disorder, led to significant improvements in acceptance (d= -0.66), borderline symptoms (d = 0.64) and self-criticism (d = 0.64 to 0.65; Feliu-Soler, et al., 2016). Furthermore, Lucre and Corten (2012) conducted a study to assess the benefits of a 16-week compassion focused group therapy in individuals with a personality disorder. The results showed a significant decrease in shame, self-hatred, depression and stress, and an increase in social functioning, well-being and self-reassurance (Lucre & Corten, 2012). Moreover, Gilbert and Procter (2006) investigated the effects of a 12-week group compassionate mind training with individuals diagnosed with a personality disorder. The outcomes present significant reductions in depression, anxiety, self-criticism and shame as well as increased feelings of compassion (Gibert & Procter, 2006). Also, different studies including non-clinical samples imply that even brief compassion interventions, ranging between between half an hour to several sessions, can lead to a long-term reduction in negative emotions, reduces self-criticism and can increase psychological well-being (Arimitsu & Hofmann, 2015).

Aim of the Study

This study is aimed at investigating the immediate effects of a brief self-compassion promoting exercise, compared to a neutral exercise, on positive and negative affect in individuals with a personality disorder. Furthermore, as high levels of self-criticism are associated with difficulties to imagine a compassionate self (Gilbert et al., 2006), it is investigated whether baseline levels of self-criticism moderate the effects of the self-compassion exercise on affect. Considering previous findings, the following hypotheses are formed:

H1: *Individuals with a personality disorder report significantly higher levels of positive affect after participating in a brief self-compassion promoting exercise, compared to a neutral exercise.*

H2: *Individuals with a personality disorder report significantly lower levels of negative affect after participating in a brief self-compassion promoting exercise, compared to a neutral exercise.*

*H*3: *The effects of the brief self-compassion promoting exercise, relative to the neutral exercise, on positive and negative affect in individuals with a personality disorder are moderated by baseline levels of self-criticism.*

Method

Design

To investigate the immediate effects of a brief self-compassion promoting exercise on positive and negative affect in individuals with a personality disorder, a two-group cross-over design was implemented. Both groups took part in a compassion exercise (C) and a neutral exercise (N), in reverse order. The study included four assessments (T0-T3), which had been conducted prior to and at the end of each exercise. For the purpose of this study, the type of exercise acted as independent variable, compassion exercise or neutral exercise. Positive and negative affect in the participants was defined as the dependent variable. Self-criticism accounted as a possible moderation variable. The design of the presented study is visualized in Figure 1 for further clarification.

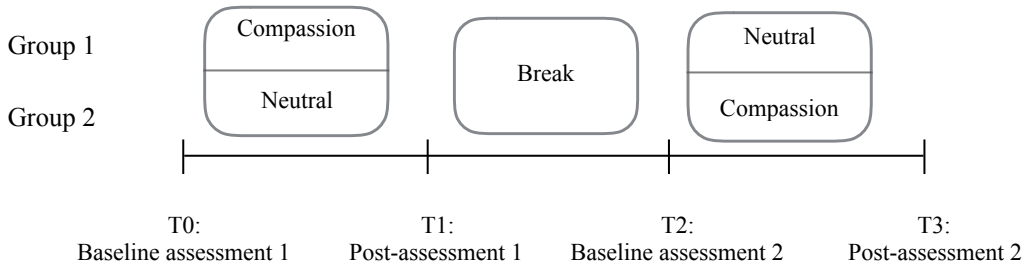

Figure 1. Overview of the study design

Participants

Participants had been recruited among patients of Scelta in Apeldoorn, which is a treatment center that is specialized in personality disorders. Inclusion criteria for the participation had been treatment at Scelta and the presence of at least one personality disorder as primary diagnosis, according to the DSM-IV. Also, potential participants had to be between 18 and 65 years old and had to be proficient in the Dutch language, so that they were able to fill in the questionnaires and take part in the exercises. Finally, individuals needed to be capable of giving their consent and to declare themselves willingly to participate in the study.

In line with those criteria, 24 individuals eventually participated in the study. The sample included 19 women and 5 men, with a mean age of 37.5. The majority of all participants (n = 22; 91.7%) was diagnosed with one or more axis-1 mental disorders, most common with a depressive disorder (n = 15; 62.5%). The most occurring personality disorder was unspecified personality disorder (n = 11; 45.8%), followed by avoidant personality disorder (n = 6; 25%). Four participants were diagnosed with more than one personality disorder.

The 24 participants have been randomly distributed over two, same-sized groups. Chi-Square analyses revealed no significant differences in demographic characteristics between the two groups ($p \geq .122$). But, one-way ANOVA showed significant differences in baseline levels of self-criticism ('hated-self' sub-scale), $F(1, 22) = 4.69$, $p = .042$, with Group 1 scoring higher than Group 2. Table 1 presents an overview of the participants' background information.

Tabel 1

Demographic characteristics of the participants (N = 24)

Characteristic		Total (N = 24)	Group 1[a] (n = 12)	Group 2[a] (n = 12)
		n (%)	*n* (%)	*n* (%)
Gender				
	Women	19 (79.2)	10 (83.3)	9 (75)
	Men	5 (20.8)	2 (16.7)	3 (25)
Age	M (SD)	37.5 (11)	37.8 (11.6)	37.2 (10.8)
Nationality				
	Dutch	22 (91.7)	10 (83.3)	12 (100)
	Other	2 (8.3)	2 (16.7)	0
Marital status				
	Married or registered partnership	8 (33.3)	3 (25)	5 (41.7)
	Not married	16 (66.7)	9 (75)	7 (58.3)
Level of Education [b]				
	Low	6 (25)	3 (25)	3 (25)
	Middle	10 (41.7)	4 (33.3)	6 (50)
	High	8 (33.3)	5 (41.7)	3 (25)
Living situation				
	Alone	9 (37.5)	5 (41.7)	4 (33.3)
	With family	15 (62.5)	7 (58.3)	8 (66.7)
Employment status [c]				
	Employed	12 (50)	5 (41.7)	7 (58.3)
	Unemployed	11 (45.8)	6 (50)	5 (41.7)
	Other (unspecified)	1 (4.2)	1 (8.3)	0
Axis 1 main diagnosis				
	ADHD	1 (4.2)	0	1 (8.3)
	Bulimia Nervosa	1 (4.2)	0	1 (8.3)
	Depressive Disorder	15 (62.5)	9 (75)	6 (50)
	Panic Disorder	1 (4.2)	1 (8.3)	0
	Posttraumatic Stress Disorder	3 (12.5)	1 (8.3)	2 (16.7)
	Alcohol Use Disorder	1 (4.2)	1 (8.3)	0
Personality disorder main diagnosis				
	Dependent Personality Disorder	3 (12.5)	1 (8.3)	2 (16.7)
	Avoidant Personality Disorder	6 (25)	2 (16.7)	4 (33.3)
	Borderline Personality Disorder	1 (4.2)	1 (8.3)	0
	Unspecified Personality Disorder	11 (45.8)	8 (66.7)	3 (25)
	Other Specified Personality Disorder	3 (12.5)	0	3 (25)

Note. [a] Group 1: C-N; Group 2: N-C. [b] The category 'low' includes: lower vocational education and general secondary education; The category 'middle' includes: higher general education and secondary vocational education; The category 'higher' includes: higher professional education and scientific education. [c] The category 'employed' includes: paid job, entrepreneur and unpaid work/ volunteer work; The category 'unemployed' includes: unemployed/ job seeking, unable to work, house wife/ househusband and student/ scholar.

Outcome Measures

The experimental study included the following four time points of assessment, at which the participants filled in self-report questionnaires (using pen and paper): Baseline assessment 1 (T0), Post-assessment 1 (T1), Baseline assessment 2 (T2), Post-assessment 2 (T3). Depending on the respective aim, different questionnaires have been handed out. Prior to the first session (T0), the participants answered questions about their demographic characteristics (including age and living situation). Furthermore, they filled in questionnaires measuring self-compassion and self-criticism, positive and negative affect, emotion dysregulation and emotion regulation strategies. Manipulation checks for self-compassion and compliance were included after each exercise (T1 & T3). For the purpose of this research paper, the following constructs were of relevance: *self-criticism* and *positive and negative affect.* The questionnaires used to assess those constructs will be described in more detail in the following. Table 2 displays a conspectus of the four assessment moments and the questionnaires.

Forms of Self-criticizing/attacking and Self-reassuring Scale (FSCRS). To measure self-criticism in the participants, the FSCRS had been used at baseline (T0). The FSCRS consists of 22 questions to assess three different constructs: reassured self, inadequate self and hated self. For the purpose of this study, only the last two sub-scales were used, as they measure forms of self-criticism. The sub-scale ’inadequate self’ (nine questions) assesses feelings of disappointment about the self, in times of setbacks and lack of success. ‘Hated self’ (five questions), on the other hand, measures self-hate and the desire of self-harm in response to set-backs. All questions are in the form of statements that can be rated on a 5- point likert scale, ranging from 1 (*not at all like me*) to 5 (*extremely like me*), depending on how accurate it reflects the individuals’ state. The following statements are examples of respectively the ‘inadequate self‘ and the ‘hated self‘ sub-scales: “There is a part of me that feels I am not good enough“ and “I have a sense of disgust with myself“ (Gilbert et al., 2004). The FSCRS will be scored by adding up total scores for each of the two sub-scales. Higher scores on ‘inadequate self’ (score range 5-45) and ‘hated self’ (score range 5-25) imply higher levels of self-criticism. Previous studies report sufficient psychometric properties, including a good internal reliability with Cronbach’s alpha above .80 (Sommers-Spijkerman et al., 2017). In the present study, acceptable internal consistency was found for the sub-scale ’inadequate self’ with a Cronbach’s alpha of .78. The ‘hated self‘ scale seems still adequate in terms of internal reliability, with a Cronbach’s alpha of almost .70 ($\alpha = .69$).

Positive and Negative Affect Schedule (PANAS). For the purpose of measuring the participants' state of positive and negative affect, the PANAS had been used during all four assessment time points (T0-T3). The PANAS measures positive and negative affect with two sub-scales of 10-items. The questionnaire consists of 20 words that represent a variety of positive (e.g. interested) and negative (e.g. ashamed) feelings and emotions. Participants were asked to rate each word on a likert scale, ranging from 1 (*very slightly or not at all)* to 5 (*extremely*), based on their current feelings. In order to score the questionnaire, a total score of each sub-scale will be calculated. For respectively the positive and negative affect scale, a score from 10 to 50 can emerge. Higher scores on the positive affect sub-scale (PA) indicate higher levels of positive affect and higher scores on the negative affect sub-scale (NA) indicate higher levels of negative affect (Watson et al., 1988). The Dutch version of the PANAS shows good internal reliability, with a Cronbach's alpha of .79 for PA and .83 for NA (Peeters, Ponds & Vermeeren, 1996). For this study, acceptable to excellent internal reliability for all measure moments were found.The internal reliability of the positive affect scales ranges from .82 to .91 and for the negative affect scales from .75 to .93.

The Implicit Positive and Negative Affect Test (IPANAT). IPANAT is an instrument that measures positive and negative affect in an indirect way. The original IPANAT consists of six artificial, non-existing words that should be related to feelings. Participants are asked to evaluate to which extent each of the non-existing words represent six feelings, three of which demonstrate positive and three negative affect (Quirin, Kazén & Kuhl, 2009). The translated Dutch version of the IPANAT was used to implicitly assess the individuals' state of positive and negative affect after each exercise session (T1 & T3). At both assessments, one of the two words 'HASWI' and 'SUKOV' was presented. Participants were asked to rate each word on a scale from 1 (*very little*) to 4 (*very much*), regarding to what extent they feel that the words express certain emotions. Three of the listed emotions imply positive affect (happy, enthusiastic and energetic) and the other three imply negative affect (tense, irritated and angry). In order to score the questionnaire, the sub-scale average scores were computed. A prior study demonstrated adequate psychometric properties with good internal reliability of .81 for positive and negative affect (Quirin et al., 2009). The current study revealed good to excellent results about the internal consistency, with the Cronbach's alpha ranging from .88 to .95 for the positive affect scale and from .83 to .92 for the negative affect scale at the two measure moments (T1 and T3).

Accordingly, positive and negative affect were measured with two different questionnaires. In order to enable the distinction, it will be referred to as directly measured (PANAS) and indirectly measured (IPANAT) positive and negative affect in the following.

Table 2

Overview of the used questionnaires for each measure moment (T0-T3)

Questionnaires	Measure moments			
	Baseline assessment 1 (T0)	Post-assessment 1 (T1)	Baseline assessment 2 (T2)	Post-assessment 2 (T3)
FSCRS	x			
PANAS	x	x	x	x
IPANAT		x		x

Exercises

The study included two brief exercises, a self-compassion promoting exercise and a neutral exercise. Both groups went through both exercises, in reverse order. Participants were verbally guided through the exercises by a compassion trainer.

Compassion Exercise (C): building a compassionate image. The compassion exercise ‘building a compassionate image‘ is an element of Compassion Focused Therapy, developed by Paul Gilbert (Gilbert, 2013). The Dutch instruction of the imagery technique was based on the self-help book ’Compassion as Key to Happiness’ (Hulbergen & Bohlmeijer, 2015). At the beginning of the exercise, attendees were informed that they will be asked to use their imaginative power and fantasy during the session. Furthermore, a duration of approximately 10 minutes was declared. Initially, participants were instructed to adopt a relaxed posture and to direct the attention to their bodies. Participants were invited to close their eyes and to focus on their breathing. Thereby, they should try to breathe evenly and calmly. Thereafter, they were encouraged to visualize a kind and compassionate image. It was emphasized that the image could be anything and some examples were mentioned. Participants should then take their time, recognizing what they see or hear, realizing features. Subsequently, participants were instructed to picture the kindness and compassion of the image flow over to them. They were asked to open up so compassion and kindness could pour into their bodies. At the end, participants were emboldened to sense the energy and feelings of compassion and warmth in their bodies, before slowly opening the eyes.

Neutral Exercise (N): 5-4-3-2-1 exercise. During the neutral exercise, participants were instructed to direct their attention on their senses. It was emphasized, that they should not overthink the task or elaborate their sensations, but merely be aware of what they experience. Furthermore, it was specified that the exercise would take about 10 minutes. To begin with, participants were engaged to focus on 5 things they see around, which they should enumerate in

their thoughts. Afterwards, they were invited to close their eyes and to focus on 4 noises, which they again should list quietly. Subsequently they should continue with focusing on 3 things they felt, 2 things they smelled and 1 thing they tasted. Examples were given for each of the five tasks. During the exercise, the participants were asked to take an alert but relaxed posture.

Procedure

The presented study was conducted on two occasions, both times in cooperation with the staff and management from Scelta in Apeldoorn. Two weeks before each study was executed, possible participants (patients registered for day treatment at Scelta) received an information letter from the principal investigator. The information letter contained an invitation to participate in the study, and a short description without revealing the true aim. Furthermore, contact details were provided in case of further questions. The patients had two weeks to consider their participation and clarify arising questions. At the day of the experiment, all persons involved met at the Scelta facility, where the study was carried out. First, the participants were welcomed and informed about the study again. When they agreed to participate, an informed consent was handed out to be signed by the participants. Next, participants were randomly and evenly allocated over two groups. The assignment to the two groups happened through the sealed envelope method to ensure a randomized distribution. After that, the two groups were seated in different rooms, together with respectively one researcher and one socio-therapist to ensure the safety of the participants. Prior to the first session, the participants answered a number of questions about their socio-demographic information. They also filled in questionnaires measuring self-criticism (FSCRS) and positive and negative affect (PANAS), in order to provide an overview of the baseline state (T0). Subsequently, both groups participated either in a compassion promoting or in a neutral exercise. As both exercises were guided by the same instructor, the groups went through the exercises one after the other, not simultaneously. The instructor was an experienced compassion trainer. After completing the exercise, the participants filled in questionnaires (T1) measuring their level of positive and negative affect (PANAS & IPANAT), to be able to determine effects of the first exercise (compassion or neutral) on the affective states of the participants afterwards. Between the two sessions, a short break of about 15 minutes was scheduled to enable effects of the first round to decline (washout effect). After the break and prior to the second exercise, the state of positive and negative affect (PANAS) was measured again (T2), to be able to check if effects of the first exercise have declined during the break. Following that, the participants took part in the second exercise, with changed conditions.

In other words, the group who already received the compassion induction exercise received the neutral condition in the second round, and vice versa. After the second exercise, positive and negative affect (PANAS & IPANAT) were measured again (T3), to be able to assess the effects of the second exercises. At the end of the study, the participants were thanked and were clarified about the aim of the research study and the reason behind the splitting into two groups. Furthermore, the participants were informed about the possibility to withdraw from the study at any time. Finally the respondents were encouraged to exchange personal experiences. Both studies took about one and a half hour and were respectively executed in one day.

Data Analyses

In order to statistically analyze the data of this study, the SPSS (Statistical Package for Social Sciences; IBM) version 21.0 was used. Data of all 24 participants have been included in the analyses. First of all, the data was checked for missing values. As missing values were detected in the FSCRS questionnaire (4.2%) and in the IPANAT questionnaire (4.2%), it was ensured that they were missing randomly with the Missing Completely at Random (MCAR) Test. Missing values were then treated with the expectation maximization method (Schlomer, Bauman & Card, 2010). Next, total and change scores from the relevant outcome measures were computed. Normality tests, with focus on Skewness and Kurtosis, showed that the data needed to test the three hypotheses were normal distributed. Thereafter, group differences at baseline measures and group differences in demographic characteristics were analyzed using one-way ANOVA and Chi-Square. Furthermore, the internal reliability per sub-scale and per measure moment of the FSCRS, PANAS and IPANAT questionnaires was assessed, with a Crobach's alpha of ≥ 0.5 considered as poor, ≥ 0.6 as questionable, ≥ 0.7 as acceptable, ≥ 0.8 as good and a Crobach's alpha of ≥ 0.9 as excellent (Gliem & Gliem, 2003).

Primary Analyses. To test the first two hypotheses, whether individuals reported significantly higher levels of positive affect (H1) and significantly lower levels of negative affect (H2) after participating in a brief self-compassion promoting exercise compared to the neutral exercise, paired samples t-tests were used. Overall, it was analyzed whether there were significant differences between the scores after the compassion exercise (C) and the scores after the neutral exercise (N), for the positive and negative affect scale scores from PANAS and IPANAT. Significant differences in scores would demonstrate that participants scored significantly higher or lower after one of the exercises.

To test the third hypothesis, whether the effects of the brief self-compassion promoting exercise on positive and negative affect are moderated by baseline levels of self-criticism (H3), moderation analyses were conducted. Therefore, the SPSS add-on PROCESS v2.16.3 by Andrew F. Hayes was used. During the moderation analyses, the positive and negative affect scores from the PANAS and IPANAT questionnaires were respectively used as outcome variables (Y) and the condition (0 = neutral exercise, 1 = self-compassion exercise) was defined as independent variable (X). The ’inadequate self’ and the ’hated self’ sub-scales of the FSCRS questionnaire were each defined as possible moderator variables. In total, eight moderation analyses were executed. A significant interaction effect of self-criticism and condition would imply that the respective self-criticism variable acted as a moderator in the relationship of the condition and the dependent variable. For all moderation analyses, the Model 1 moderation, 1000 bootstrapping samples and a confidence interval of 95% were used.

Secondary Analyses. In secondary analyses, it was checked for other effects that could have an influence on the outcomes of the prior analyses. First, it was checked for the presence of carryover effects. Therefore, PANAS baseline measures at T0 and at T2 were compared by paired samples t-tests. Significant differences in baseline scores would imply that effects after the first exercise persisted on to the beginning of the second exercise. Subsequently, it was analyzed whether there was a period effect. Paired samples t-tests were used to compare positive and negative affect scores (PANAS and IPANAT) after the first exercise (T1) with the respective scale scores after the second exercise (T3) over the entire group. Significant differences between the two measure moments would indicate that the time point of assessment itself had an effect on the outcome, regardless the exercise prior to the measure. Finally, it was tested whether there was a sequence effect. Therefore, positive and negative affect change scores (C-N), measured explicitly (PANAS) and implicitly (IPANAT), were compared between the two groups with an independent samples t-test. A significant difference in the scores would indicate that the order of receiving the exercises had an effect on the outcome measures.

For each test, a significance level of $p < .05$ was considered as significant. In the case of significant findings, the effect size (d) was calculated using the following formula: $d = (M_2 - M_1) / S_{\text{pooled}}$. An effect size of $d = 0.2$ is regarded as small, an effect size of $d = 0.5$ as medium and an effect size of $d = 0.8$ is regarded as large (Nakagawa & Cuthill, 2007).

Results

Primary Analyses

Effects on Positive Affect (H1). There were no significant differences between the positive affect scores, measured directly (PANAS) and indirectly (IPANAT), after the compassion exercise (C) and the neutral exercise (N). The results suggest that the brief self-compassion exercise had no significant effect on positive affect compared to the neutral exercise.

Effects on Negative Affect (H2). The analyses of differences in negative affect scores revealed mixed findings as the results differ per questionnaire. The negative affect scores, measured directly (PANAS), were not significantly different after the self-compassion and the neutral exercise. But, there was a significant difference after the two exercises in negative affect scores, that were measured implicitly (IPANAT); $t(22)= -2.26$, $p = .003$, $d = .46$. The results imply that negative affect (IPANAT) was significantly lower after the self-compassion exercise compared to the neutral exercise. So, the outcomes indicate that the brief self-compassion exercise had a significant effect on negative affect, compared to the neutral exercise, when negative affect was measured implicitly. The results of the paired samples t-tests are demonstrated in Table 3. Figure 2 and Figure 3 visualize the differences in positive and negative affect after the two conditions, neutral exercise and compassion exercise.

Moderation Effect of Self-Criticism (H3). The moderation analyses did not reveal any significant moderation effects of self-criticism. But, the overall models with negative affect, measured directly (PANAS), as dependent variable and inadequate self as moderator, $F(3, 44)= 4.75$, $p < .01$, $R^2 = .31$, or hated self as moderator, $F(3, 44)= 4.53$, $p < .01$, $R^2 = .21$, are significant. The results imply that 31% of the variance in negative affect (PANAS) can be explained by the three predictors: inadequate self, condition and their interaction, and 21% of the variance can be explained by the three predictors: hated self, condition and their interaction. When looking at the two moderation models and their effects in Table 4, it is noticeable that only the two self-criticism constructs are significant predictors of negative affect (PANAS); inadequate self: $b= 1.05$, $t(44) = 3.12$, $p = .003$; hated self: $b= 1.15$, $t(44) =3.52$, $p = .001$. However, there are no significant interaction effects of self-criticism and the condition (self-compassion or neutral exercise) in the models, so self-criticism did not moderate any of the effects the self-compassion exercise had on positive or negative affect as compared to the neutral exercise. But, levels of self-criticism also seem to be significant predictors for positive affect measured directly (PANAS); inadequate self: $b= -.63$, $t(44) = -2.20$, $p = .033$; hated self: $b= -.73$, $t(44) =-2.67$, p = .011. There are no significant effects on affect measured indirectly (IPANAT).

Table 3

Paired samples t-tests with scores after the self-compassion (C) and the neutral (N) exercise.

	C	N	C-N			
Group	*M (SD)*	*M (SD)*	*M (SD)*	95% CI	t^b	*p*
Both Groups; N=24						
PANAS (PA)	21.42 (7.31)	22.04 (8.11)	-0.63 (3.66)	[-2.17, .92]	-.84	.411
IPANAT (PA)	2.43 (1.24)	2.14 (1.23)	0.29 (1.36)	[-.28, .87]	1.05	.304
PANAS (NA)	24.67 (9.88)	26.67 (12.60)	-2.00 (6.01)	[-4.54, .54]	-1.63	.117
IPANAT (NA)	2.27 (1.37)	2.86 (1.20)	-0.60 (1.29)	[-1.14, -.05]	-2.26*	.033
Group 1 (C then N)[a]						
PANAS (PA)	19.50 (7.44)	18.00 (7.58)	1.50 (3.23)	[-.55, 3.55]	1.61	.136
IPANAT (PA)	2.17 (1.31)	2.06 (1.43)	0.11 (0.69)	[-.33, .55]	.56	.586
PANAS (NA)	25.50 (9.94)	27.42 (15.08)	-1.92 (8.14)	[-7.09, 3.26]	-.82	.432
IPANAT (NA)	2.39 (1.45)	2.58 (1.32)	-0.19 (1.43)	[-1.10, .71]	-.47	.650
Group 2 (N then C)[a]						
PANAS (PA)	23.33 (6.96)	26.08 (6.65)	-2.75 (2.77)	[-4.51, -.99]	-3.44**	.006
IPANAT (PA)	2.69 (1.17)	2.22 (1.04)	0.47 (1.82)	[-.69, 1.63]	-2.36	.389
PANAS (NA)	23.83 (10.18)	25.92 (10.16)	-2.08 (3.06)	[-4.03, -.14]	.90*	.038
IPANAT (NA)	2.14 (1.35)	3.14 (1.06)	-1.00 (1.04)	[-1.66, -.34]	-3.32**	.007

Note. C: Compassion exercise, N: Neutral exercise.

[a] n = 12. [b] Findings of the paired samples t-test comparing C with N.

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

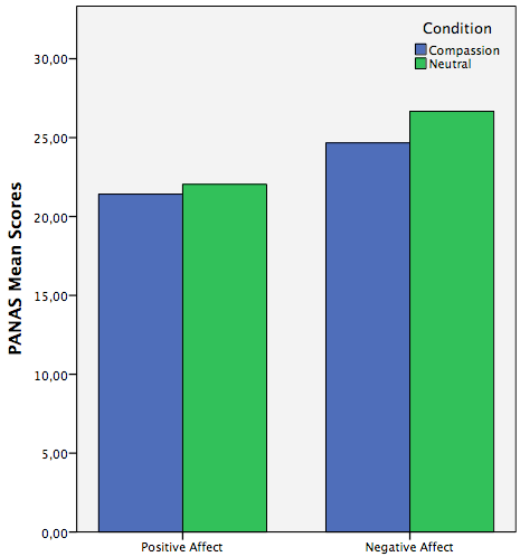

Figure 2. Differences in positive and negative affect scores (PANAS) after the self-compassion exercise and the neutral exercise

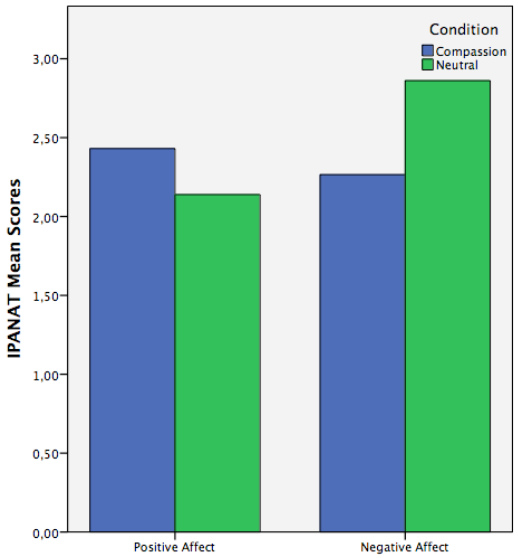

Figure 3. Differences in positive and negative affect scores (IPANAT) after the self-compassion exercise and the neutral exercise

Table 4

Main Effects, Interaction Effects and Model Summary with self-criticism as moderator (N=48)[a]

	Main and Interaction Effects				Model Summary		
Model	*b*	*t* (44)	*p*	95% CI	R^2	*F*	*p*
PANAS PA (X)					.23	1.86	.151
Inadequate self (M)	-.63	-2.20	.033*	[-1.20, -.05]			
Condition (Y)	-.63	-.28	.777	[-5.05, 3.80]			
Inadequate self*Condition	.15	.27	.791	[-1.00, 1.30]			
IPANAT PA (X)					.04	.60	.617
Inadequate self (M)	-.03	-1.00	.323	[-.09, .03]			
Condition (Y)	.29	.78	.439	[-.46, 1.04]			
Inadequate self*Condition	.02	.26	.794	[-.11, .14]			
PANAS NA (X)					.31	4.75	.006**
Inadequate self (M)	1.05	3.12	.003**	[.37, 1.73]			
Condition (Y)	-2.00	-.67	.509	[-8.05, 4.05]			
Inadequate self*Condition	.12	.18	.856	[-1.24, 1.48]			
IPANAT NA (X)					.08	1.19	.323
Inadequate self (M)	.04	.98	.333	[-.04, .12]			
Condition (Y)	-.60	-1.50	.140	[-1.39, .20]			
Inadequate self*Condition	-.01	-.11	.911	[-.17, .15]			
PANAS PA (X)					.19	2.63	.062
Hated self (M)	-.73	-2.67	.011*	[-1.29, -.18]			
Condition (Y)	-.63	-.29	.774	[-4.99, 3.74]			
Hated self*Condition	.27	.48	.630	[-.84, 1.38]			
IPANAT PA (X)					.07	.95	.426
Hated self (M)	-.06	-1.41	.167	[-.15, .03]			
Condition (Y)	.29	.79	.434	[-.45, 1.04]			
Hated self*Condition	.06	.67	.503	[-.12, .24]			
PANAS NA (X)					.21	4.53	.008**
Hated self (M)	1.15	3.52	.001**	[.49, 1.81]			
Condition (Y)	-2.00	-.65	.520	[-8.22, 4.22]			
Hated self*Condition	-.04	-.06	.950	[-1.36, 1.27]			
IPANAT NA (X)					.10	1.46	.237
Hated self (M)	.07	1.28	.207	[-.04, .17]			
Condition (Y)	-.60	-1.52	.136	[-1.39, .20]			
Hated self*Condition	-.03	-.25	.806	[-.24, .18]			

Note. X: Dependent variable; Y: Independent variable; M: Moderator; PA: Positive Affect; NA: Negative Affect

[a] The sample (N= 24) counts double as every participant went through both conditions, neutral exercise and compassion exercise

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

Secondary Analyses

Residual (Carryover) Effect. Paired samples t-tests revealed no significant difference in positive affect scores (PANAS) between the two baseline assessments T0 and T2; $t(23)=1.55$, $p = .134$. But, there was a significant difference in negative affect scores (PANAS), with higher scores at T0 ($M= 30.79$, $SD=8.75$) than at T2 ($M= 23.38$, $SD= 10.90$); $t(23)= 5.54$, $p <.001$, $d = .75$. These outcomes suggest that effects after the first exercise on negative affect might have persisted to the beginning of the second exercise.

Period Effect. There was a significant difference in positive affect scores measured directly (PANAS) after the first and the second exercise, with higher scores at T1 ($M= 22.79$, $SD= 7.68$) than at T3 ($M= 20.67$, $SD= 7.62$); $t(23)= 3.46$, $p = .002$, $d = .28$. No significant differences between T1 and T3 were found in positive affect scores measured implicitly (IPANAT); $t(23)= -.64$, $p = .528$ or in negative affect scores measured directly (PANAS); $t(23)= .06$, $p = .949$ and indirectly (IPANAT); $t(23)= 1.45$, $p = .160$. That means that merely the time of the assessments had an effect on the positive affect scores, that were measured directly (PANAS). In other words, PANAS positive affect decreased over time, regardless the previous exercise. Time had no effect on the other measure outcomes.

Sequence (Order) Effect. Independent samples t-test revealed a significant difference between the two groups in positive affect change scores (C-N), measured directly (PANAS). The change scores indicate an increase in positive affect for Group 1 ($M= 1.5$, $SD= 3.23$) and a decrease in positive affect for Group 2 ($M= - 2.75$, $SD= 2.77$); $t(22)= 3.46$; $p= .002$, $d = 1.41$. There were no significant differences in the positive affect change scores measured implicitly (IPANAT); $t(22)= -.64$, $p = .527$ or in the negative affect change scores measured by PANAS; $t(22)= .07$, $p = .948$ and by IPANAT; $t(22)= 1.59$, $p = .127$. The results imply that the order of receiving the two exercises had an impact on positive affect (PANAS). Positive affect was significantly higher after the compassion exercise compared to the neutral exercise, when the order of receiving the exercises was first compassion and then neutral. The order of receiving the exercise had further no effect on the other outcome measures. These results correspond with the findings of a period effect, saying that positive affect measured directly (PANAS) decreased over time.

Discussion

The current study was aimed at investigating the immediate effects of a brief self-compassion exercise, in comparison with a neutral exercise, on positive and negative affect in individuals with a personality disorder. Furthermore, it was investigated whether baseline levels of self-criticism moderated the effects of the self-compassion exercise. The results of the study revealed no significant differences in positive affect between the self-compassion and the neutral exercise. Also, there was no moderation effect of self-criticism. The only significant finding was a difference in implicitly measured negative affect scores, whereby negative affect was lower after the self-compassion exercise compared to the neutral exercise. But, there was no significant difference in directly measured negative affect scores.

The participants did not report significantly higher levels of positive affect after participating in the brief self-compassion exercise, compared to the neutral exercise. Accordingly, the first hypothesis has to be rejected. These outcomes do not correspond with findings of previous studies, indicating an increase in positive affect after a self-compassion intervention (e.g. Mantelou & Karakasidou, 2017) and generally implying a positive correlation between self-compassion and positive affect (e.g. Mantelou & Karakasidou, 2017; Barnard Curry, 2011). But, most of the studies indicating a positive correlation between self-compassion and positive affect were conducted with students rather than a clinical sample, which makes the outcomes less comparable.

Also, the participants did not report significantly lower levels of directly measured negative affect after the self-compassion exercise compared to the neutral exercise. But, they did report significantly lower levels of implicitly measured negative affect after participating in the brief self-compassion exercise, compared to the neutral exercise. This shows that the second hypothesis can neither be rejected nor fully confirmed. The different way of measuring affect, directly and indirectly, can be a possible explanation for the ambiguous results. A direct way of measuring affect seems to be more prone to self-report flaws, such as incorrect labeling and social desirability (Quirin et al., 2018). So, it might be that the participants had difficulties to correctly classify their current feelings and emotions, when asked directly.

Finally, there was no moderation effect of self-criticism. These findings refute the third hypothesis that self-criticism did not moderate the effects of the brief self-compassion exercise relative to the neutral exercise on positive and negative affect. The results of the last hypothesis seem not surprising, considering that the self-compassion exercise had almost no significant effect on positive and negative affect in the first place.

Considerations

When comparing the current study with other papers that report promising findings of self-compassion, different aspects become apparent that might explain the lack of significant results. First of all, this research was aimed at investigating the effects of a brief self-compassion exercise. The referred studies that suggest positive effects of self-compassion in individuals with a personality disorder, mostly included self-compassion training of a longer duration with at least three sessions (e.g. Feliu-Soler et al., 2016; Lucre & Corten, 2012). Yet, there are few studies that confirm positive effects of a brief compassion induction exercise in a non-clinical sample, for instance a significant reduction in negative affect after a 30 minute compassionate thinking exercise (Arimitsu & Hofmann, 2015). So, the self-compassion exercise of ten minutes might have been too brief for a clinical sample, to foster self-compassion and to have beneficial effects on their positive and negative affect.

Correspondingly, self-compassion imagery exercises are often used as one part of a broader self-compassion training. Mostly, a theoretical introduction to self-criticism and self-compassion is included at the beginning, in form of psycho-education, for instance in studies investigating effects of self-compassion (e.g. Sommers-Spijkerman, Trompetter, Schreurs, & Bohlmeijer, 2018; Gilbert & Irons, 2004). In particular, the inclusion of psycho-education has been rated as helpful in a compassion study with individuals with a personality disorder (Gilbert & Procter, 2006). The missing psycho-educational part or the type of exercise might be a reason why the self-compassion exercise was not effective in improving positive and reducing negative affect in the participants of this study.

Finally, another aspect that could explain why the self-compassion exercise had almost no effect on positive and negative affect, is fear of compassion in the participants. Theories suggest that feelings of compassion can activate memories of the early attachment system. Individuals with a history of trauma and fear often have difficulties with experiencing positive emotions, feelings of compassion and calming down, due to bad experiences with similar feelings and with the resulting state of being vulnerable (Gilbert, 2013), because it can evoke negative memories, especially at the beginning (Gilbert, 2009). As individuals with personality disorders frequently had adverse childhood experiences (e.g. Doering & Sachse, 2008; Samuels, 2011), fear of compassion could have made it difficult for them to comply with the self-compassion imagery exercise. This fact would suggest a more sensitive and long-term approach to foster self-compassion.

Strengths & Limitations

All in all, the current study presents several strong aspects as well as some limitations. First of all, a major strength of this study is the research design. One of the advantages of a cross-over design is that participants act as their own control. Within-subject comparisons are less prone to response variation in repeated measures and are generally more accurate than comparisons between groups. Also, less participants are needed in studies using a cross-over design (Elbourne et al., 2002). Another strong point is the relevance of the underlying topic. Though there are many research papers supporting benefits of self-compassion for all sorts of people, it seems that only a few studies are particularly directed at individuals with a personality disorder. Furthermore, the current research includes individuals with a personality disorder in general. Most research investigating positive affect, is particular directed at individuals with a borderline personality disorder. Also, brief exercises that can be implemented in a group setting are cost and time effective. Therefore, research investigating the effectiveness of such exercises can be an important contribution to the psychotherapeutic practice.

A weak point of the study design is the possibility of a carryover effect, which means that effects of a previous condition persist to the next condition (Elbourne et al., 2002), as it was the case in this study. Another limitation of this research is, that individuals had to repeatedly fill in several questionnaires measuring different constructs, up to four times for the PANAS questionnaire. The use of repeated measures might lead to an increase or decrease in scores over time, simply because of changes in states, like an increase in fatigue. In fact, this limitation could be a possible reason for the decrease in directly measured positive affect over time (period effect). Another weakness of this study is, that it was not controlled for variables that might have an influence on the outcomes, such as the severity of the personality disorder or the presence of comorbid conditions. Individuals with comorbid conditions or with severe personality disorder might have more difficulties to engage in the self-compassion exercise and could have drawn down the results.

Recommendations

The current study is one of the few investigating effects of self-compassion in individuals with a personality disorder. In particular, it seems to be the first to focus on effects of a brief self-compassion exercise on the individuals' positive and negative affect. The outcomes of this study slightly indicate beneficial effects of a brief self-compassion exercise on negative affect in individuals with a personality disorder. All in all, further research in this field is recommended.

First of all, one study seems not enough to come to generalizable conclusions. Also, when considering the limitations of this study, it seems worthwhile to adapt research concerning this topic. For instance, subsequent studies might consider to include a longer break to prevent carryover effects. Moreover, further studies should consider including less questionnaires to prevent other influences on positive and negative affect, like fatigue. Also, the outcomes of this study raised some questions that demand further investigation.

As other studies report significant improvements on a range of outcome measures in individuals diagnosed with a personality disorder after a self-compassion training (e.g. Lucre & Corten, 2012), it seems important to conduct research in terms of effective parts of self-compassion interventions. For example, it is recommended to include other self-compassion interventions in further studies, such as Compassionate Mind Training, or to include more person-oriented interventions, depending on the personality disorder. In addition, further studies should investigate effects of different exercise intensities, for instance a longer duration and/or more repetitions. For future research it seems worthwhile to focus on the value of psycho-education. As psycho-education can be used to address self-criticism by giving de-shaming information about the origin and function (Lucre & Corten, 2012), it seems to be an important part for the effectiveness of self-compassion exercises. The suggestion for further research in terms of effective factors of self-compassion exercises seems to correspond with other research papers, requesting more research on effective parts of interventions in general for individuals with a personality disorder (Samuels, 2011; Bartak, Soeteman, Verheul & Busschbach, 2007). For further studies, it is also recommended to assess the presence of fear of compassion in the participants, for instance via questionnaires. As this condition is known to impede positive effects of a self-compassion exercise (Gilbert, 2009), one could attentively address this issue, for example in form of psycho-education and a longer intervention program.

Conclusion

The current study seems to be a valuable contribution to current research about the benefits of self-compassion. The results suggest that a brief, ten-minute self-compassion imagery exercise might lead to a reduction in negative affect in individuals with a personality disorder. But the brief self-compassion exercise was insufficient in increasing positive affect in the individuals. Furthermore, the outcomes of this study imply that levels of self criticism did not moderate the effects of the self-compassion exercise on positive and negative affect. Instead the results indicate that levels of self-criticism affected positive and negative affect in a direct way.

Despite the reserved results of this study, it seems worthwhile to integrate self-compassion interventions in the treatment of individuals with a personality disorder. However, the duration and form of the self-compassion intervention should be adapted to the needs of the respective patients. Subsequent research in the field of the effectiveness of self-compassion and self-compassion interventions for individuals with a personality disorder is recommended.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th edition). Arlington, VA: American Psychiatric Association.

Arimitsu, K., & Hofmann, S. G. (2015). Effects of compassionate thinking on negative emotions. *Cognition and Emotion*, *31*(1), 160-167.

Baião, R., Gilbert, P., McEwan, K., & Carvalho, S. (2015). Forms of self−criticising/attacking & self−reassuring scale: Psychometric properties and normative study. *Psychology and Psychotherapy: Theory, Research and Practice*, *88*(4), 438-452.

Barnard, L. K., & Curry, J. F. (2011). Self-compassion: Conceptualizations, correlates, & interventions. *Review of general psychology*, *15*(4), 289.

Bartak, A., Soeteman, D. I., Verheul, R., & Busschbach, J. J. (2007). Strengthening the status of psychotherapy for personality disorders: An integrated perspective on effects and costs. *The Canadian Journal of Psychiatry*, *52*(12), 803-810.

Colijn, S., Cnossen, M. C., & Haringsma, R. (2014). The working alliance in inpatient treatment for personality disorders and its connection with patient characteristics: an exploratory study. *Tijdschrift voor psychiatrie*, *56*(8), 505-513.

Costa, J., Marôco, J., Pinto−Gouveia, J., Ferreira, C., & Castilho, P. (2015). Validation of the psychometric properties of the Self−Compassion Scale. Testing the factorial validity and factorial invariance of the measure among borderline personality disorder, anxiety disorder, eating disorder and general populations. *Clinical psychology & psychotherapy*, *23*(5), 460-468.

Doering, S. & Sachse, R. (2008). 21 Psychotherapie bei Persönlichkeitsstörungen.

Domes, G., Winter, B., Schnell, K., Vohs, K., Fast, K., & Herpertz, S. C. (2006). The influence of emotions on inhibitory functioning in borderline personality disorder. *Psychological medicine*, *36*(8), 1163-1172.

Dukalski, B., Quirin, M., Kersting, A., Suslow, T., & Donges, U. S. (2017). Implicit affectivity in patients with borderline personality disorder. *Rivista di psichiatria*, *52*(2), 83-89.

Elbourne, D. R., Altman, D. G., Higgins, J. P., Curtin, F., Worthington, H. V., & Vail, A. (2002). Meta-analyses involving cross-over trials: methodological issues. *International journal of epidemiology*, *31*(1), 140-149.

Feliu−Soler, A., Pascual, J. C., Elices, M., Martín−Blanco, A., Carmona, C., Cebolla, A., ... & Soler, J. (2016). Fostering self−compassion and loving−kindness in patients with borderline personality disorder: a randomized pilot study. *Clinical psychology & psychotherapy*, *24*(1), 278-286.

Fiedler P. (2009). *Persönlichkeitsstörungen*. In: Margraf J., Schneider S. (eds) Lehrbuch der Verhaltenstherapie. Springer, Berlin, Heidelberg

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American psychologist*, *56*(3), 218.

Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in psychiatric treatment*, *15*(3), 199-208.

Gilbert, P. (2013). *Compassion Focused Therapy.* Paderborn: Junfermann Verlag.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology*, *53*(1), 6-41.

Gilbert, P., Baldwin, M. W., Irons, C., Baccus, J. R., & Palmer, M. (2006). Self-criticism and self-warmth: An imagery study exploring their relation to depression. *Journal of Cognitive Psychotherapy*, *20*(2), 183.

Gilbert, P., Clarke, M., Hempel, S., Miles, J. N., & Irons, C. (2004). Criticizing and reassuring oneself: An exploration of forms, styles and reasons in female students. *British Journal of Clinical Psychology*, *43*(1), 31-50.

Gilbert, P., & Irons, C. (2004). A pilot exploration of the use of compassionate images in a group of self−critical people. *Memory*, *12*(4), 507-516.

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self−criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology & Psychotherapy*, *13*(6), 353-379.

Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education.

Hulsbergen, M. & Bohlmeijer, E. (2015). *Compassie als sleutel tot geluk. Voorbij stress en zelfkritiek.* Amsterdam, Boom.

Linehan, M. M., Kanter, J. W. & Comtois, K. A (1999). Dialectical behavior therapy for borderline personality disorder: Efficacy, specificity, and cost-effectiveness. In D. S. Janowsky (Ed.), *Psychotherapy: Indications and Outcomes.* Washington, DC: American Psychiatric Press, 93

Longe, O., Maratos, F. A., Gilbert, P., Evans, G., Volker, F., Rockliff, H., & Rippon, G. (2010). Having a word with yourself: Neural correlates of self-criticism and self-reassurance. *NeuroImage*, *49*(2), 1849-1856.118.

Lucre, K. M., & Corten, N. (2012). An exploration of group compassion−focused therapy for personality disorder. *Psychology and Psychotherapy: Theory, Research and Practice*, *86*(4), 387-400.

Mantelou, A., & Karakasidou, E. (2017). The Effectiveness of a Brief Self-Compassion Intervention Program on Self-Compassion, Positive and Negative Affect and Life Satisfaction. *Psychology*, *8*, 590-610.

Nakagawa, S., & Cuthill, I. C. (2007). Effect size, confidence interval and statistical significance: a practical guide for biologists. *Biological reviews*, *82*(4), 591-605.

Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and identity*, *2*(2), 85-101.

Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of research in personality*, *41*(1), 139-154.

Peeters, F. P. M. L., Ponds, R. W. H. M., & Vermeeren, M. T. G. (1996). Affectiviteit en zelfbeoordeling van depressie en angst. *Tijdschrift voor psychiatrie*, *38*, 240-250.

Quirin, M., Kazén, M., & Kuhl, J. (2009). When nonsense sounds happy or helpless: the implicit positive and negative affect test (IPANAT). *Journal of personality and social psychology*, *97*(3), 500.

Samuels, J. (2011). Personality disorders: epidemiology and public health issues. *International Review of Psychiatry*, *23*(3), 223-233.

Saulsman, L. M., & Page, A. C. (2004). The five-factor model and personality disorder empirical literature: A meta-analytic review. *Clinical psychology review*, *23*(8), 1055-1085.

Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *Journal of Counseling psychology*, *57(1)*, 1.

Sommers-Spijkerman, M., Trompetter, H., ten Klooster, P., Schreurs, K., Gilbert, P., & Bohlmeijer, E. (2017). Development and Validation of the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale—Short Form. *Psychological Assessment.* Advance online publication. http://dx.doi.org/10.1037/pas0000514

Sommers-Spijkerman, M. P. J., Trompetter, H. R., Schreurs, K. M. G., & Bohlmeijer, E. T. (2018). Compassion-focused therapy as guided self-help for enhancing public mental health: A randomized controlled trial. *Journal of consulting and clinical psychology*, *86*(2), 101.

Turner, B. J., Jin, H. M., Anestis, M. D., Dixon-Gordon, K. L., & Gratz, K. L. (2018). Personality pathology and intentional self-harm: cross-cutting insights from categorical and dimensional models. *Current opinion in psychology, 21,* 55-59.

Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of abnormal psychology*, *97*(3), 346.