

**The Effect of Emotion Regulation on Symptom and Core Belief Change through
Imagery Rescripting for Disordered Eating**

Master Thesis (SOW-MPSGP90)

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Abstract

The treatment of eating disorders (EDs) is difficult due to the chronic nature of the illness. Current methods of treatment are only partly effective in addressing underlying mechanisms of maintenance of these disorders. Imagery rescripting (ImRs) may be able to address underlying mechanisms more effectively via emotional pathways. This study investigated the effect of emotion regulation on ED symptom and core belief change through different ImRs strategies (self-compassion/mastery) in a sample of female participants with subclinical ED symptoms. For this, 21 participants were recruited. The participants completed a prescreening, a baseline measurement, one of the ImRs interventions and a follow-up measurement. ED symptoms and negative core beliefs were measured at baseline and follow-up. The participants showed significant decrease in ED symptoms and negative core beliefs, though no effect of emotion regulation was found. No difference between the ImRs strategies was found. To conclude, there is no effect of emotion regulation on ED symptoms reduction and core belief change.

The Effect of Emotion Regulation on Symptom and Core Belief Change through Imagery Rescripting for Disordered Eating

Eating disorders (EDs) are food- and body image related problems, which are characterized by restrictive diet, binge-eating episodes, overeating and/or compensatory behaviors such as excessive exercise or abuse of laxatives (American Psychiatric Association (APA), 2013). The main EDs diagnosed in adults described in the Diagnostic and Statistical Manual of Mental Disorders 5 are Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Binge Eating disorder (BED) (APA, 2013). The treatment of EDs is difficult due to chronicity, high risk of dropout and early relapse (Khalsa et al., 2017; Carter et al., 2012; Fassino et al., 2009).

Due to the large overlap in symptomology in these disorders, a transdiagnostic model for the mechanisms underlying the maintenance of EDs was developed (Fairburn et al., 2003). This model describes how dysfunctional schemes for self-evaluation, such as overevaluation of eating, shape and/or weight and perfectionism are central in maintaining EDs. These schemes are influenced by interpersonal difficulties, low self-esteem, and mood intolerance. These factors interact, playing a role in maintaining strict dieting and other weight control behavior, which in turn may trigger binge eating and thus compensatory behavior such as vomiting or laxative misuse (Fairburn et al., 2003). The maladaptive thinking this model describes is seen as an unconditional and pervasive view that can be characterized as a piece of the ED patient's permanent identity (Fairburn et al., 2003). The term core belief can be seen as similar to these views.

Core beliefs are also believed to be implicated in the genesis and maintenance of EDs (Cooper, 2011). They are absolute cognitions about the world, the self and others that are applied to many situations in life and are resistant to change (Cooper, 2011; Waller et al., 2000). Core beliefs are developed in early life and are central to a patient's psychopathology (Cooper, 2011). A distinction is made between emotional and rational core beliefs, though a core belief can be believed on both levels. Emotional core beliefs refer to the degree one believes a core thought to be true, regardless of rational evaluation, whereas rational core beliefs are the degree to which one logically believes the thought is true (Cooper et al., 2007).

It has been suggested that conventional treatments, e.g., cognitive behavioral therapy (CBT) has only limited effect in changing emotional core beliefs, given that they address these beliefs using techniques that focus cognitive and behavioral pathways (Tatham, 2011; Cooper, 2011). Imagery rescripting (ImRs) addresses mental representations that underly psychopathology using imagery, rather than verbal methods. This is believed to be more effective in the long term because it addresses mental representations underlying the

psychopathology (Arntz, 2020). While CBT may be effective in changing rational core beliefs, ImRs may make a good addition, as it is effective in reducing negative emotional core beliefs via emotional pathways, as mental imagery has been found to produce greater emotional response than verbal stimuli (Cooper et al., 2007; Cooper, 2011; Holmes et al., 2008).

ImRs aims to change the meaning of memories of aversive past experiences by addressing these memories and having patients imagine a desired change of the event in question (Arntz, 2012; Arntz & Weertman, 1999). This involves three phases. In the first phase the patient imagines and describes a concrete childhood experience as lively and detailed as possible from the perspective of their child self. This childhood experience should be involved in the origin of maladaptive thinking about themselves. In the second phase the same experience is imagined with the patient as an adult, from a third-person view, as if they were a bystander. The patient examines their feelings and how they are inclined to change the situation. The patient then intervenes in the situation until they feel it is resolved. In the third phase the patient imagines the scene again as a child, while experiencing the intervention the adult implemented in the second phase. The patient is asked to imagine whether they would need anything else from the intervening adult. The patient's child self then asks for further intervention from the adult, until the child feels the situation is resolved (Arntz & Weertman, 1999).

Few studies have examined the effectiveness of ImRs in patients with EDs. One pilot study examined change in core beliefs in 24 female BN patients who were randomly assigned to an experimental or a control group (Cooper et al., 2007). In the experimental group the participants discussed an upsetting early memory and modified the associated core belief through imagery techniques. The control group also discussed an upsetting memory and then examined the effect of the associated core beliefs on their current functioning. Rational and emotional core beliefs were decreased for all participants, with a greater decrease found in the ImRs condition than in the control condition. The ImRs condition was found to be more effective in increasing the emotional and rational believability in the core belief that patients were deserving of help and protection. More recently, Dugué et al. (2019) compared the effects of ImRs and cognitive restructuring on emotions, core beliefs and ED symptoms in patients with BED or BN. Both interventions were equally effective in decreasing negative emotions and core beliefs. At follow up the effect size of decrease in emotional core beliefs was higher for the ImRs group than for the cognitive restructuring group. Furthermore, Penessi and Wade (2018) examined patients at risk of developing EDs. They found increased body image acceptance for patients who received a single ImRs intervention compared to the group that received a cognitive dissonance intervention. Compared to the control condition ImRs showed

more improvement of self-compassion and less disordered eating. Another study by Zhou et al. (2020) found that participants at risk of developing an ED practicing imagery rescripting for five minutes each day for a week improved more than participants receiving psychoeducation or no treatment after negative mood induction. The participants receiving body image related ImRs showed improvements on self-compassion compared to psychoeducation and control, whereas participants receiving more general ImRs showed more improvement on clinical perfectionism and low self-esteem compared to control. Zhou and Wade (2021) investigated the effect of ImRs as an addition to treatment as usual (TAU) compared to TAU in 11 ED patients over four weeks. It was found that the TAU group showed faster symptom reduction than the TAU+ImRs group.

The studies described above show the effectiveness of ImRs in changing core beliefs in EDs and can be seen as promising for the application of ImRs for EDs. The studies show promise by affecting underlying mechanisms of maintenance of EDs. Most of these studies had small sample sizes and most of them included only a one-week follow-up measurement to investigate the consistency of the effects that were found. Few of the studies used a passive control group that received no treatment. It has yet to be shown what factors influence the effectiveness of ImRs.

There are different strategies that can be used to rescript memories during ImRs. One such strategy is increasing a patient's feeling of power and resourcefulness, called mastery imagery (Wheatley & Hackman, 2011). This sense of self-efficacy is often disturbed for ED patients. A study by Troop et al. (1998) found that women with EDs were less likely to respond masterfully to crises than women without EDs. Berman (2006) even found that low confidence in ability to control eating behavior while experiencing negative emotions was associated with increased ED symptoms in a non-clinical sample. Conclusively, low self-efficacy seems to also be related to the non-clinical population experiencing problems with eating behavior and weight management. Mastery may thus be a relevant factor in combatting ED symptoms through ImRs and increasing feelings of self-efficacy, by helping the patient to feel more in control over the memory.

Compassionate imagery is another variant of ImRs, where the patient accesses soothing or nurturing feelings (Wheatley & Hackman, 2011). For EDs, research suggests that self-compassion possibly acts as a protective factor against negative body image and disordered eating (Braun et al., 2016; Steindl et al., 2017). Increased self-compassion is seen as a protective factor against psychopathology (Trompetter et al., 2017). The exploration of different kinds of ImRs is relevant to give more precise practical implications for the use of ImRs for EDs.

Emotion regulation may be a moderating factor for the effectiveness of ImRs, as it requires the participant have insight in their own feelings. Emotion regulation refers to the way emotions are influenced (McRae & Gross, 2020). Successful emotion regulation requires correct identification of feelings and recognition of the own power to influence these feelings (Gutentag et al., 2017; McRae & Gross, 2020). Furthermore, an individual must be able to select a successful strategy and monitor whether it is effective in changing the (unwanted) emotion (McRae & Gross, 2020). In ImRs the individual needs to identify current emotions as well as the emotions of their younger self. Additionally, the patient needs to be able to adaptively intervene in the memory to achieve desired change of the aversive memory.

Emotion regulation is often disturbed in patients with EDs. They report higher levels of emotion intensity, lower acceptance of emotions, less emotional awareness and clarity and self-report more emotion regulation problems than healthy controls (Svaldi et al., 2012). This is further reflected in the affect regulation model for binge eating, which frames binge eating as a maladaptive attempt to regulate emotional discomfort or distress that ultimately increases negative emotions such as guilt or shame (Hawkins & Clement, 1984). More generally, the mood intolerance factor in the transdiagnostic model of EDs is indicative of how emotion regulation is relevant in EDs (Fairburn et al., 2003). There is evidence that mental imagery might enable access to emotions (Holmes & Mathews, 2010; Tatham, 2011). Indeed, it is suggested that ImRs is likely to change the way the memory is regulated emotionally by changing the meaning associated with it (Arntz, 2020). The use of a technique that calls on emotion regulation skills in a group of patients for whom these skills might be disordered poses the question whether emotion regulation skills at the beginning of the intervention influence the effectiveness of treatment.

The present study will use a mixed design with two between-subject conditions: ImRs inducing self-compassion and ImRs inducing mastery. The first aim is to compare two forms of ImRs in their effect on core beliefs and ED symptoms. Based on the findings of Cooper et al. (2007), Dugué et al. (2019), Pennesi and Wade (2018), and Zhou et al. (2020), it is hypothesized that both variants will be effective in reducing ED symptoms and core beliefs.

The second aim of the study is to examine whether the effect of ImRs on ED symptoms is moderated by emotion regulation skills, seeing how maladaptive emotion regulation is linked to the maintenance of EDs, as is evident in the transdiagnostic model for EDs and the affect regulation model for binge eating (Fairburn et al., 2003; Hawkins & Clement, 1984) and that ImRs requires the patient to identify the emotions as well as the emotional need of their adult

and child self. It is hypothesized that more adaptive emotion regulation will lead to stronger reduction of negative core beliefs and ED symptoms for both conditions.

The third hypothesis is that the effect of adaptive emotion regulation will be stronger for the self-compassion inducing ImRs than for ImRs inducing mastery. It is expected that participants with more adaptive emotion regulation will have a higher reduction of ED symptoms and negative core beliefs in the self-compassion condition than in the mastery condition of ImRs. Self-compassion relies on components of emotion regulation, as it too requires the individual to experience and examine the (negative) emotion (Neff, 2003a, Neff, 2003b). In PTSD and depression patients it was found that emotion regulation influenced self-compassion (Diedrich et al., 2017; Scoglio et al., 2018). Based on these findings the same is expected for ED patients. For this study it is expected that those with better emotion regulation skills can use self-compassion more effectively and will thus benefit more from an ImRs strategy that aims to improve self-compassion.

Method

Participants

This study focused on a non-clinical sample of adult female individuals at risk of developing an ED. The participants were pre-screened using the Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 2008). Participants scoring between 1.8 and 4.0 were included in the study, as scores within this range are indicative of ED symptoms, without indicating a clinical ED (Machado et al., 2014). Participants with a BMI lower than 17.4 were excluded from the study. In total 319 participants filled in the prescreening. Of these 76 (N=48 English, N=28 Dutch) met the inclusion criteria. Eligible participants were assigned alternatingly to the experimental groups. Of the eligible participants, 37 were able to schedule and receive an intervention, with 32 (N=16 English, N=16 Dutch) completing the whole experiment. Five participants (13.51%) dropped out, by not filling in the follow-up questionnaire in time. Of the remaining 32 participants, 11 were assigned to the control condition, which leaves 21 (N=10 Dutch, N=11 English) participants. The mean age of these participants was 23.34 years ($SD = 3.09$). There were 13 participants who received ImRs compassion, 8 who received ImRs mastery. Participants received 1,5 Sona credits for their participation or partook voluntarily.

Materials

The EDE-Q (Fairburn & Beglin, 2008) was used to measure ED psychopathology. It consists of four subscales: Restraint scale, Eating Concern scale, Weight Concern scale, and Shape Concern scale. The participants are asked to self-report on 28 (English version) or 36 (Dutch version) items on a 7-point Likert Scale (1 = *No days* to 7 = *Every day*). The questionnaire was adapted for the follow up measurement to reflect the past seven days since the intervention. The questionnaire has acceptable test-retest reliability, temporal stability, and internal consistency (Berg et al., 2011). In this study the internal consistency was very high for the English version of the questionnaire (Cronbachs $\alpha = .93$) and acceptable for the Dutch version (Cronbachs $\alpha = .74$).

Emotion regulation was measured using the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003). This questionnaire measures cognitive reappraisal and expressive suppression. The ERQ has good internal consistency reliability and is reliable across ethnic groups (Melka et al., 2011). In this study this questionnaire had very low internal consistency for the Dutch (Cronbachs $\alpha = .17$) and the English version (Cronbachs $\alpha = .22$). In this questionnaire participants are asked to rate how they control their emotion, rating ten statements regarding their emotion regulation on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Participants who had higher cognitive reappraisal scores than expressive suppression were grouped as having adaptive emotion regulation. Others were classified as having maladaptive emotion regulation.

Negative core beliefs were measured using the Eating Disorder Belief Questionnaire (EDBQ; Rawal, Park, & Williams, 2010). This questionnaire has been found to have acceptable internal reliability, test-retest reliability, convergent validity and is successfully able to distinguish clinical from non-clinical participants (Bergin & Wade, 2014). In this questionnaire the participants were asked to rate their beliefs about themselves regarding 32 items on a scale ranging from 1 (*I don't usually believe this at all*) to 100 (*I am usually completely convinced that this is true*). In this study the internal consistency was found to be very high for the English version (Cronbachs $\alpha = .97$) and high for the Dutch version of the questionnaire (Cronbachs $\alpha = .85$).

The participants were asked to identify a (negative) childhood memory. For this a memory re-activation task based on the procedure of Arntz and Weertman (1999) was used to identify the memory of a recent moment where the participants were worried about their eating/body/weight/shape. The participants were then asked to imagine themselves as a child having similar feelings. When a spontaneous memory came to mind the participants were asked

to describe the memory in detail. The participants were asked to identify the worst part of the memory and what it meant about them as a person. They were asked to rate how much they believe the meaning of the memory rationally and emotionally on a scale of 1 (*I do not believe this thought*) to 100 (*I am convinced that this thought is true*). The participants further rated the memory on vividness, perspective (1 = *first person* to 100 = *third person*), emotionality (-3 = *extremely negative* to +3 = *extremely positive*) and anxiety, anger and shame at worst moment in the memory. The questions regarding controllability and self-compassion were used as a manipulation check.

The ImRs Interventions

The participants first recalled the distressing memory they identified during the memory activation task, were asked to imagine it vividly and then identified the worst part of the memory and the feelings it evoked. After this the participants were guided to alter the meaning associated with the memory. First the participants were asked to vividly remember the situation as if they were their younger self. In the self-compassion conditions the participants were then asked to imagine the scene as an adult and asked to intervene in a self-compassionate way, so their child self could feel more loved and accepted. Lastly, the participants reentered the imagined memory as their younger self. They were asked to imagine the experience of the intervention of their adult self and identify their feelings and further desires about the intervention. This procedure was developed based on the protocol by Arntz and Weertman (1999). This intervention took circa 20 minutes.

The ImRs condition inducing self-mastery followed the same procedure, but instead of reacting self-compassionately the participants were asked to change the situation, so they felt more empowered and in control of the situation. This intervention also took about 20 minutes. Scripts of both interventions can be found in Appendix A.

Manipulation Check

To check for manipulation, the participants were asked to rate the level of compassion they felt for themselves in the aversive situation before and after the intervention on a scale of 0 (*not at all compassionate*) to 100 (*very compassionate*) and how in control they felt in the situation before and after the intervention on a scale of 0 (*not at all empowering*) to 100 (*very empowering*).

Procedure

The study included three phases: a prescreening, a baseline measure and manipulation using one of the ImRs conditions, and a follow-up one week after the intervention. During the

prescreening, the participants were asked for their SONA-ID or nickname, email-address, BMI (weight, height, age) and completed the EDE-Q questionnaire via Qualtrics. Beforehand the participants were informed about the study and asked to consent to participation and processing of personal information such as weight, age, height nickname and email address. The participants were further asked to permit contact in case of clinically important scores. The information letter and consent form can be found in Appendix B. The participants that qualified for the study received an email-invitation to further participate in the study and were asked to schedule a 40-minute meeting. Participants that did not meet the eligibility criteria were informed about this and thanked for their participation via email. Eligible participants were randomly assigned to a condition by method of alternation.

One day (24h) before the meeting, participants were sent the baseline questionnaire and the meeting invitation via email, with the request to fill in the questionnaire within 24 hours before the scheduled meeting. The order of the baseline questionnaire was EDE-Q, EDBQ, then ERQ. Other questionnaires not relevant to this paper were also included in the baseline questionnaire. The ImRs interventions were conducted online via a Qualtrics, using pre-recorded instructions. Meetings were held via zoom (Yuan, 2012). During the meeting, the participants kept their cameras off, and their microphones muted, using the chat function of the meeting to answer and ask questions. The researchers only unmuted their microphone to explain the procedure of the meeting and to respond to questions from the participants. After explaining the procedure and answering questions the researchers sent the link to the intervention in the zoom-chat and requested the participants to follow the instructions of the Qualtrics questionnaire and to write any questions or comments using the chat function. One week after the intervention the participants received a final email asking them to fill in the follow-up questionnaire containing the EDE-Q and the EDBQ using a Qualtrics link on the same day the email arrived. Before and after the intervention, the participants were asked to rate the rescripted memory in vividness, emotionality, and anxiety and perceived control of the situation and self-compassion towards themselves in Qualtrics.

Data Analysis

The data was analyzed using two separate repeated-measure ANCOVAs. The IVs are ImRs condition (self-compassion/self-mastery, qualitative) as a between-subject factor, time (baseline/follow up, qualitative) as a within subject factor and emotion regulation skill (quantitative) as a covariate. The DVs are EDE-Q score (quantitative) and EDBQ score (quantitative). To correct for multiple testing, the significance level α was adjusted from 0.05

to 0.025 for the main analyses, using Bonferroni's correction. Prior to analysis, the assumptions of an ANCOVA (independent observations, normality, homogeneity, homogeneity of regression slopes and linearity) were checked. The data were also checked for randomization and missing values. Normality was tested using a Shapiro-Wilk test of normality because both conditions had less than 20 participants. All variables were found to be normally distributed for both conditions. ERQ scores were standardized prior to analysis to improve interpretability.

Visually, there was no homogeneity of regression slopes for both EDE-Q and EDBQ. Further analysis using two separate ANCOVAs with condition as between subject factor, follow-up score of the respective questionnaire as dependent variable and ERQ-score as covariate showed no significant interaction (EDBQ: $F(1,17)=3.10$, $p=.096$; EDE-Q: $F(1,17)=2.76$, $p=.115$). The homogeneity of regression slopes assumption thus holds for both variables.

Seeing how the sample sizes between the conditions were unequal, with the ratio being 1.65 and thus larger than 1.5 homogeneity of variance had to be checked. Levene's test of equality of error variances was not significant for either variable, thus homogeneity of variance can be assumed. Tests for linearity between the dependent variables and ERQ-scores showed no significant deviations from linearity. The assumption of linearity is held for both EDE-Q and EDBQ. Manipulation was checked using t-tests for paired samples to analyze the manipulation check questions.

Results

At baseline, the participants presented the following scores for EDE-Q and EDBQ (see table 1). To test for randomization, t-test for independent samples showed no significant differences between the groups for either score (EDE-Q: $t(19) = 0.26$, $p = .795$, Cohen's $d = 0.12$; EDBQ: $t(19) = 0.84$, $p = .411$, Cohen's $d = 0.38$). The participants had an average BMI of 24 ($SD = 3.4$). At baseline, 15 participants self-reported to have had overeaten on, on average, 6.41 times in 28 days ($SD = 4.22$). 11 participants reported having a feeling of loss of control while overeating on average 7.00 times in the last 28 days ($SD = 4.30$). One participant had vomited once in the past 28 days to influence their weight or shape. 16 of the participants had exercised in order to influence their weight/shape on average on 6.7 occasions in the last 28 days ($SD = 3.91$).

A t-test for independent samples showed no difference between the two conditions for both measures of emotion regulation in the ERQ (Expression suppression: $t(19) = 0.01$, $p = .994$, Cohen's $d = .00$; Cognitive reappraisal: $t(19) = -0.79$, $p = .440$, Cohen's $d = -0.35$). The

ERQ showed similar mean use of expression suppression and cognitive reappraisal across the whole sample. Of the 21 participants, 12 showed maladaptive emotion regulation and 9 showed adaptive emotion regulation. For baseline data see table 2.

Table 1

EDE-Q and EDBQ scores at Baseline and Follow-up

	Condition					
	ImRs self compassion		ImRs Mastery		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
EDE-Q Baseline	2.54	0.91	2.42	1.24	4.46	1.02
EDE-Q Follow-up	1.90	0.89	1.86	0.91	3.32	0.88
EDBQ Baseline	40.08	14.12	33.57	21.49	37.60	17.01
EDBQ Follow-up	28.95	15.85	27.74	19.86	28.49	17.08

Table 2

Baseline data

	Condition					
	ImRs self compassion		ImRs Mastery		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
ERQ-Score	3.87	0.60	4.11	0.51	3.96	0.57
ERQ- Expression Suppression	3.94	1.42	3.94	1.21	3.94	1.31
ERQ-Cognitive Reappraisal	3.82	1.36	4.23	0.66	3.98	1.14
BMI	23.68	2.47	22.78	4.04	23.34	3.09
Age	22.62	2.29	22.25	1.83	22.47	2.09

For EDE-Q-scores, analysis showed a significant effect of time ($F(1, 17) = 16.38, p = .001, \eta^2 = .49$). ERQ score was also not found to have a significant effect ($F(1, 17) = 4.65, p = .046, \eta^2 = .22$). No significant interaction effects were found between time, condition and ERQ-score ($F(1,17) = 0.04, p = .842, \eta^2 = .00$). There was also no significant interaction effect between time and condition ($F(1, 17) = 0.00, p = .990, \eta^2 = .00$). The interaction between time and ERQ-score was also not significant ($F(1, 17) = 4.65, p = .046, \eta^2 = .22$). There were no significant effects of condition ($F(1, 17) = 0.01, p = .919, \eta^2 = .00$) or ERQ-score ($F(1, 17) = 1.77, p = .201, \eta^2 = .09$). A visual representation of the EDE-Q scores can be found in table 1.

For EDBQ score similar results were found. There was a significant effect of time ($F(1, 17) = 9.22, p = .007, \eta^2 = .35$). No significant time, condition and ERQ-score interaction was found ($F(1, 17) = 0.06, p = .813, \eta^2 = .00$). Furthermore, there was no significant interaction effect of time and ERQ-score ($F(1, 17) = 0.94, p = .345, \eta^2 = .05$) or time and condition ($F(1, 18) = 0.70, p = .415, \eta^2 = .04$). There was no significant effect of

condition ($F(1, 17) = 0.01, p = .944, \eta^2 = .00$). For EDBQ, ERQ score had a significant between-subject effect ($F(1, 17) = 9.67, p = .006, \eta^2 = .36$). For a visual representation of the change of EDBQ scores see table 1.

The results of the manipulation check were non-significant. There seems to have been no change of feelings of self-compassion ($t(20) = -0.83, p = .461, \text{Cohen's } d = -.18$). There was however a significant increase in feelings of mastery ($t(20) = -4.80, p = .000, \text{Cohen's } d = -1.05$). A repeated measures ANOVA showed no significant group and condition interaction ($F(1,19) = 1.89, p = .185, \eta^2 = .09$).

Discussion

This study aimed to further examine the applicability of ImRs for EDs. It was hypothesized that both ImRs inducing self-compassion and ImRs inducing mastery would reduce ED symptoms and negative core beliefs in individuals with disordered eating. This hypothesis can be accepted. No significant difference was found between the two ImRs strategies. It was furthermore hypothesized that there would be a moderating effect of emotion regulation on the effect of both ImRs interventions on ED symptoms and negative core beliefs. No such effect was found in this study, the hypothesis is rejected. Consequently, the third hypothesis that the effect of emotion regulation on reduction of ED symptoms and negative core beliefs would be stronger in the self-compassion condition, is also rejected. To conclude, it can be said that both forms of ImRs are effective and that emotion regulation does not moderate the effect of ImRs on ED symptoms.

As hypothesized, this study replicated results found by Cooper et al. (2007), Penessi and Wade (2008), Dugué et al. (2019) and Zhou et al. (2020), seeing how ImRs was found to effectively reduce ED symptoms and core beliefs. A possible mechanism of change for core beliefs may have been that the imagery evoked during the ImRs task elicited emotions. Core beliefs may have been influenced via emotional pathways that were made accessible via imagery (Holmes and Mathews, 2010; Tatham, 2011). It is possible that both ImRs interventions were effective in influencing negative core beliefs by eliciting emotional responses through mental imagery. ED symptoms may have been reduced through the improvement of underlying dysfunctional self-evaluation and its effect on eating behavior according to the transdiagnostic model for eating disorders (Fairburn et al., 2003).

This study did not find that the patients experienced an increase in feelings of self-compassion. The decrease of ED symptoms can thus not be explained by increase of self-compassion. Increased self-compassion is usually seen as a protective factor against

psychopathology (Braun et al., 2016; Steindl et al., 2017). The reduction of ED symptoms can thus not be explained by an increase of self-compassion. It was however found that the participants experienced a significant increase in feelings of control over the situation, although no difference was found between the groups. It may be the case that the participants felt empowered after both ImRs interventions and that they experienced an increase in feelings of self-efficacy. Feelings of inability to control eating while feeling negative emotions has been linked to increased ED symptoms (Berman, 2006). Changes in feelings of self-efficacy have been previously linked to treatment outcome in ED patients. (Keshen et al., 2017). The increase in feelings of empowerment may thus have led to a decrease in ED symptoms.

It was hypothesized that adaptive emotion regulation would increase the reduction in ED symptoms and core beliefs. This idea is not supported by the current data. For the self-compassion variant of ImRs, the hypothesis was based on the idea that adaptive emotion regulation would facilitate the use of self-compassion. In the current study this may not have been the case because self-compassion was not successfully induced by either condition. Furthermore, the direction of the relationship between self-compassion and emotion regulation is still under discussion (Inwood & Ferrari, 2018). Some studies found that adaptive emotion regulation improved self-compassion (Diedrich et al., 2017; Scoglio et al., 2018). Others contrastingly found that increased self-compassion improved emotion regulation in mood and anxiety disorders (Diedrich et al., 2014; Finlay-Jones, 2017). It may thus also have been the case that no effect was found because self-compassion influences emotion regulation, and not the other way around. Another reason no effect of emotion regulation could be found may be that the internal consistency of the ERQ was unacceptable in this sample. The ERQ was in this case not a reliable measure of emotion regulation.

The effect of ImRs inducing mastery had on ED symptoms and core beliefs was also not influenced by emotion regulation. It was hypothesized that ImRs would be influenced by emotion regulation because ImRs requires the participant to be aware of not only their own emotions but the emotions of their child self as well. It is furthermore possible that no effect was found because the instrument chosen to measure emotion regulation had unacceptable internal consistency and was thus not properly measured.

In addition to these theoretical factors, this study had other limitations. The sample size of this study was small, leaving the study underpowered. Furthermore, this study did not include a control condition in which participants received no treatment to directly compare the effects of ImRs with a waitlist condition.

The fact that ImRs seems to be effective for treating EDs warrants the need for further research. Further research could add control groups to facilitate comparison with other interventions or waitlist. The consistency of the effect of single-session ImRs on ED symptoms and core beliefs could also be investigated in future research by including later and more follow up sessions. The relationship between ImRs for EDs and emotion regulation remains unclear. Future studies could examine this relationship by using a different measure for emotion regulation to examine its moderating effect. Future research could furthermore investigate the relationship between emotion regulation and self-compassion, to further clarify how the two factors influence each other.

In conclusion, this study found that ImRs inducing self-compassion and ImRs inducing mastery are effective in reducing ED symptoms and negative core beliefs in individuals with non-clinical disordered eating. This provides further evidence for the effectiveness and applicability of both examined variants of ImRs as an adjunct to the treatment of EDs. Treatment for EDs can thus be expanded upon using interventions focused on mastery of self-compassion according to the patient's need.

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Appendix A

Scripts of the recorded instructions for the ImRs conditions

ImRs inducing self-compassion

English

Written instructions:

In following, you will do an exercise for which you will need to put your headphones on. You will listen to recorded instructions.

Before we start, could you please let us know what your current distress level is, on a scale from 0 to 10? Zero indicates that you are experiencing very little to no distress, whereas 10 indicates you are experiencing extremely high levels of distress.

When you are ready to start, please press the 'Next' button.

MINUTE 1

Welcome to this exercise. Please try to keep your eyes closed throughout this exercise if possible, as that will make it easier for you to concentrate.

While keeping your eyes closed, please try to imagine the memory you identified earlier as vividly and with as much detail as possible, as if it is happening again right here and now. Pay close attention to what you are seeing. Perhaps you can hear something? Or maybe you are noticing some bodily sensations, you can smell something, or taste something?

MINUTE 2

Very good. Ok, now go to the worst part of the memory and try to fully experience the feelings this evokes.

MINUTE 3.5

All right. Now, view this scene in your memory as a bystander to the situation. You as the person you are today are watching your younger self in the memory. Now, if you could do anything to make your younger self feel loved and accepted in this memory, what would you do? Look closely what the needs of your younger self may be. What do you need to make your younger self feel loved and accepted? You are free to experiment with doing anything you want to make your younger self feel loved and accepted. It does not have to be realistic. It can also be something that you would not normally do. All right, go ahead and imagine this happening in the memory now.

/// 4.30

You are doing really well. Try to keep this up.

/// 8.40

Very good! Pay attention to how your younger self is feeling now. Does she feel better? Did it help?

Are there perhaps other things you want to do in the memory to make your younger self feel loved and accepted? Pay close attention to the needs of your younger self in the memory. If you are not happy yet, you can go back and try something else to make your younger self feel loved and accepted. You are completely free to do anything you want to this end. Go ahead and imagine this happening now. If you are already happy with the memory, and your younger self feels loved and accepted now, then just keep this new memory in mind and continue to experience it fully.

///

You are doing really well, keep it up!

THIRD PHASE

Now we are going to the next phase of the exercise. I would like you to view the scene of your memory through the eyes of younger self again; but this time, also imagine everything that your older self did to make you feel loved and accepted. Pay close attention to what is happening, how do you feel now? Do you feel loved and accepted? Are you happy with these changes? Or is there perhaps something else that you need to feel loved and accepted? If so, just ask your older self to do this and imagine this unfolding in your memory.

///

Very good! How are you, as your younger self, feeling now? Are you feeling better? Did it help?

Are there perhaps other things you want your older self to do to make you feel loved and accepted? Pay close attention to your needs. If you are not happy with the memory yet, you can ask your older self to do anything that would make you feel loved and accepted and imagine this unfolding in your memory. You are completely free to ask for anything you want to this end. Go ahead and imagine these changes now. If you are already happy with the memory, and you feel loved and accepted now, then just keep this new memory in mind and continue to experience it fully.

///

You are doing really well, keep it up!

///

This is the end of the exercise. Thank you for your participation. You can open your eyes and follow the instructions on the screen.

Dutch

Schriftelijke instructies:

Hierna start je een oefening waarbij je de hoofdtelefoon op moet zetten. Je luistert naar opgenomen instructies.

Voordat we beginnen, kun je ons alstublieft laten weten wat je huidige stressniveau is, op een schaal van 0 tot 10? Nul geeft aan dat je zeer weinig tot geen stress ervaart, terwijl 10 aangeeft dat je extreem veel stress ervaart.

Wanneer je klaar bent om te beginnen, druk dan op de knop 'Volgende'.

MINUTE 1

Welkom bij deze oefening. Probeer je ogen indien mogelijk gesloten te houden tijdens deze oefening, want dat maakt het makkelijker voor je om je te concentreren.

Terwijl je je ogen gesloten houdt, probeer je alsjeblieft de herinnering die je eerder hebt aangegeven zo levendig en gedetailleerd mogelijk voor te stellen, alsof het hier en nu opnieuw gebeurt. Let goed op wat je ziet. Misschien kun je iets horen? Of misschien merk je wat lichamelijke gewaarwordingen, kun je iets ruiken, of proeven?

MINUTE 2

Heel goed. Ok, ga nu naar het ergste deel van de herinnering en probeer de gevoelens die dit oproept volledig te ervaren.

MINUTE 3,5

Ok. Bekijk nu deze scène in je herinnering als een omstander van de situatie. Jij als de persoon die je vandaag de dag bent, kijkt naar je jongere zelf in de herinnering toen. Nu, als je iets zou kunnen doen om je jongere zelf zich geliefd en geaccepteerd te laten voelen in deze herinnering, wat zou je dan doen? Kijk goed wat de behoeften van je jongere zelf kunnen zijn. Wat heb je nodig om je jongere zelf geliefd en geaccepteerd te laten voelen? Je bent vrij om te experimenteren met alles wat je wilt om je jongere zelf zich geliefd en geaccepteerd te laten voelen. Het hoeft niet realistisch te zijn. Het kan ook iets zijn dat je normaal gesproken niet zou doen. Goed, ga je gang en stel je voor dat dit nu in de herinnering gebeurt.

///

Je doet het heel goed. Probeer dit te blijven doen.

///

Heel goed! Let op hoe je jongere zelf zich nu voelt. Voelt ze zich beter? Heeft het geholpen?

Zijn er misschien nog andere dingen die je wil doen in de herinnering om je jongere zelf zich geliefd en geaccepteerd te laten voelen? Let goed op de behoeften van je jongere zelf in de herinnering. Als je nog niet tevreden bent, kun je teruggaan en iets anders proberen om je jongere zelf zich geliefd en geaccepteerd te laten voelen. Je bent volledig vrij om alles te doen wat je wil om dit te bereiken. Ga je gang en stel je je voor dat dit nu gebeurt. Als je al tevreden bent met de herinnering, en je jongere zelf voelt zich nu geliefd en geaccepteerd, houd dan gewoon deze nieuwe herinnering in gedachten en blijf deze volledig ervaren.

///

Je doet het echt goed, ga zo door!

DERDE FASE

Nu gaan we naar de volgende fase van de oefening. Ik zou je willen vragen om de scène uit je herinnering weer door de ogen van je jongere zelf te bekijken; maar stel je je deze keer ook voor wat je oudere of tegenwoordige zelf deed om je geliefd en geaccepteerd te laten voelen. Let goed op wat er gebeurt, hoe voel je je nu? Voel je je geliefd en geaccepteerd? Ben je blij met deze veranderingen? Of is er misschien nog iets anders dat je nodig hebt om je geliefd en geaccepteerd te voelen? Als dat zo is, vraag dan maar aan je oudere zelf om dit te doen en stel je voor dat dit zich in je herinnering ontvouwt.

///

Heel goed! Hoe voelt je je, als je jongere zelf, nu? Voel je je beter? Heeft het geholpen?

Zijn er misschien nog andere dingen die je wilt dat je oudere zelf doet om je geliefd en geaccepteerd te laten voelen? Let goed op je behoeften. Als je nog niet blij bent met de herinnering, kun je je oudere zelf alles vragen om te doen waardoor je je geliefd en geaccepteerd zou voelen, en stel je voor dat dit zich in je herinnering ontvouwt. Je bent volledig vrij om alles te vragen wat je wilt om dit te bereiken. Ga je gang en stel je deze veranderingen nu voor. Als je al blij was met de herinnering en je voelt je nu geliefd en geaccepteerd, houd dan deze nieuwe herinnering gewoon in gedachten en blijf deze volledig ervaren.

///

Je doet het echt goed, ga zo door!

///

Dit is het einde van de oefening. Dank je voor je deelname. Je kunt je ogen openen en de instructies op het scherm volgen.

ImRs inducing self-mastery

English

Written instructions:

In following, you will do an exercise for which you will need to put your headphones on. You will listen to recorded instructions.

Before we start, could you please let us know what your current distress level is, on a scale from 0 to 10? Zero indicates that you are experiencing very little to no distress, whereas 10 indicates you are experiencing extremely high levels of distress.

When you are ready to start, please press the 'Next' button.

MINUTE 1

Welcome to this exercise. Please try to keep your eyes closed throughout this exercise if possible, as that will make it easier for you to concentrate.

While keeping your eyes closed, please try to imagine the memory you identified earlier as vividly and with as much detail as possible, as if it is happening again right here and now. Pay close attention to what you are seeing. Perhaps you can hear something? Or maybe you are noticing some bodily sensations, you can smell something, or taste something?

MINUTE 2

Very good. Ok, now go to the worst part of the memory and try to fully experience the feelings this evokes.

MINUTE 3.5

All right. Now, view this scene in your memory as a bystander to the situation. You as the person you are today are watching your younger self in the memory. Now, if you could do anything to make your younger self feel empowered and in control in this memory, what would you do? Look closely what the needs of your younger self may be. What do you need to make your younger self feel empowered and in control? You are free to experiment with doing anything you want to make your younger self feel empowered and in control. It does not have to be realistic. It can also be something that you would not normally do. All right, go ahead and imagine this happening in the memory now.

///

You are doing really well. Try to keep this up.

///

Very good! Pay attention to how your younger self is feeling now. Does she feel better? Did it help?

Are there perhaps other things you want to do in the memory to make your younger self feel empowered and in control? Pay close attention to the needs of your younger self in the memory. If you are not happy yet, you can go back and try something else to make your younger self feel empowered and in control. You are completely free to do anything you want to this end. Go ahead and imagine this happening now. If you are already happy with the memory, and your younger self feels empowered and in control now, then just keep this new memory in mind and continue to experience it fully.

///

You are doing really well, keep it up!

THIRD PHASE

Now we are going to the next phase of the exercise. I would like you to view the scene of your memory through the eyes of younger self again; but this time, also imagine everything that your older self did to make you feel empowered and in control. Pay close attention to what is happening, how do you feel now? Do you feel empowered and in control? Are you happy with these changes? Or is there perhaps something else that you need to feel empowered and in control? If so, just ask your older self to do this and imagine this unfolding in your memory.

///

Very good! How are you, as your younger self, feeling now? Are you feeling better? Did it help?

Are there perhaps other things you want your older self to do to make you feel empowered and in control? Pay close attention to your needs. If you are not happy with the memory yet, you can ask your older self to do anything that would make you feel empowered and in control, and imagine this unfolding in your memory. You are completely free to ask for anything you want to this end. Go ahead and imagine these changes now. If you are already happy with the memory, and you feel empowered and in control now, then just keep this new memory in mind and continue to experience it fully.

///

You are doing really well, keep it up!

///

This is the end of the exercise. Thank you for your participation. You can open your eyes and follow the instructions on the screen.

Dutch

Schriftelijke instructies:

Hierna start je een oefening waarbij je de hoofdtelefoon op moet zetten. Je luistert naar opgenomen instructies.

Voordat we beginnen, kun je ons alstublieft laten weten wat je huidige stressniveau is, op een schaal van 0 tot 10? Nul geeft aan dat je zeer weinig tot geen stress ervaart, terwijl 10 aangeeft dat je extreem veel stress ervaart.

Wanneer je klaar bent om te beginnen, druk dan op de knop 'Volgende'.

MINUTE 1

Welkom bij deze oefening. Probeer je ogen indien mogelijk gesloten te houden tijdens deze oefening, want dat maakt het makkelijker voor je om je te concentreren.

Terwijl je je ogen gesloten houdt, probeer je alsjeblieft de herinnering die je eerder hebt aangegeven zo levendig en gedetailleerd mogelijk voor te stellen, alsof het hier en nu opnieuw gebeurt. Let goed op wat je ziet. Misschien kun je iets horen? Of misschien merk je wat lichamelijke gewaarwordingen, kun je iets ruiken, of proeven?

MINUTE 2

Heel goed. Ok, ga nu naar het ergste deel van de herinnering en probeer de gevoelens die dit oproept volledig te ervaren.

MINUTE 3,5

Ok. Bekijk nu deze scène in je herinnering als een omstander van de situatie. Jij als de persoon die je vandaag de dag bent, kijkt naar je jongere zelf in de herinnering toen. Nu, als je iets zou kunnen doen om je jongere zelf zich sterk en in controle te laten voelen in deze herinnering, wat zou je dan doen? Kijk goed wat de behoeften van je jongere zelf kunnen zijn. Wat heb je nodig om je jongere zelf sterk en in controle te laten voelen? Je bent vrij om te experimenteren met alles wat je wilt om je jongere zelf zich sterk en in controle te laten voelen. Het hoeft niet realistisch te zijn. Het kan ook iets zijn dat je normaal gesproken niet zou doen. Goed, ga je gang en stel je voor dat dit nu in de herinnering gebeurt.

///

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///

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///

Je doet het echt goed, ga zo door!

DERDE FASE

Nu gaan we naar de volgende fase van de oefening. Ik zou je willen vragen om de scène uit je herinnering weer door de ogen van je jongere zelf te bekijken; maar stel je je deze keer ook voor wat je oudere of tegenwoordige zelf deed om je sterk en in controle te laten voelen. Let goed op wat er gebeurt, hoe voelt je je nu? Voel je je sterk en in controle? Ben je blij met deze veranderingen? Of is er misschien nog iets anders dat je nodig hebt om je sterk en in controle te voelen? Als dat zo is, vraag dan maar aan je oudere zelf om dit te doen en stel je voor dat dit zich in je herinnering ontvouwt.

///

Heel goed! Hoe voelt je je, als je jongere zelf, nu? Voel je je beter? Heeft het geholpen?

Zijn er misschien nog andere dingen die je wilt dat je oudere zelf doet om je sterk en in controle te laten voelen? Let goed op je behoeften. Als je nog niet blij bent met de herinnering, kun je je oudere zelf alles vragen om te doen waardoor je je sterk en in controle zou voelen, en stel je voor dat dit zich in je herinnering ontvouwt. Je bent volledig vrij om alles te vragen wat je wilt om dit te bereiken. Ga je gang en stel je deze veranderingen nu voor. Als je al blij was met de herinnering en je voelt je nu sterk en in controle, houd dan deze nieuwe herinnering gewoon in gedachten en blijf deze volledig ervaren.

///

Je doet het echt goed, ga zo door!

///

Dit is het einde van de oefening. Dank je voor je deelname. Je kunt je ogen openen en de instructies op het scherm volgen.

Appendix B

Information letter and consent form

English

INFORMATION LETTER

for participation in scientific research: Don't let your habits eat you!

1a. Introduction/Aim of the research

You are invited to take part in scientific research. The goal of the study is to find out more about the causes for distorted eating behaviors such as frequent dieting, eating too much and a distorted body image. During this study we want to find out if working with negative autobiographical memory might have an effect on changing someone's eating behavior and self-beliefs. To study this we will be using questionnaires and an intervention within a group of people who might have weight problems and/or a negative body image but are not diagnosed with an eating disorder.

1b. The research

First, you will be asked to fill in a screening questionnaire. If you suit our research criteria, you will be asked to fill in another questionnaire. You can do that online. To do that, we will contact you via email. After that, you will be taking part in an intervention. One week after the intervention we will again ask you to fill in some questionnaires. If you have any questions about the measures, do not hesitate to ask them, preferably before or during your participation in the research. The study has been independently reviewed by the Ethics Committee Social Sciences (ECSS) of the Radboud University and there is no formal objection to this study.

2a. Use of your personal data

To conduct the research, it is necessary that your personal data are collected, used and stored. It concerns the following data: weight, height, age, name and e-mailadres. The use and storage of your personal data such as your weight, length and age are necessary to calculate your BMI. Your name and contact data will be used to invite you to take part in the second and third part of the study and to inform you in a case of clinical relevant findings.

2b. Confidentiality of your data and data processing

The information you provide for the current research purposes is treated with the utmost care and is accessible to authorized staff only. Personal data collected by the researcher about you will remain confidential throughout the research. In order to safeguard your privacy, the researcher saves your personal data using a process of encryption/pseudonymisation. This means that your name and any other particulars that can identify you directly, are kept separate from the research data. It is only possible to find out which research data belongs to which person by means of a code or subject number. The link between data that can identify you directly and all other research data is stored in a key file. This key file is encrypted and/or password protected. Only authorized members of the research team have access to this information. No other parties involved in the research shall receive any data that can be traced back to you. In order to disguise your identity, only anonymized research data are to be used in reports and publications regarding the research.

2c. Retention period of your data

The consent form signed by you will be kept for 10 years upon completion of the research. Your (anonymized) research data will be stored for 10 years after the research has been completed. The link between your personal data and your research data will be kept for a maximum of 1 month following completion of the research. This means that you can request to have your research data deleted (by sending an email to f.kadriu@psych.ru.nl) no later than 1 month after the completion of the research. After that, your research data can no longer be deleted, as they are stored anonymously only. This means we no longer know which research data belongs to you personally.

2d. Sharing your data

Due to the importance of control, reuse and/or replication of research results, research data (including any anonymous personal data) are increasingly shared with or made available to other researchers. Your data will be anonymized prior to this form of sharing. This means that you can no longer be identified on the basis of these data. If you do not want your anonymized data to be shared, you can request to have your data deleted up to a maximum of 1 month after completion of the research.

2e. Right of access by supervisory authorities to inspect the research's compliance with ruling guidelines

Some persons and organizations must have access to your personal and research data. This is necessary in order to test whether the research has been carried out properly and reliably. These persons and supervisory authorities inspecting your data for verification include: authorized persons within the Behavioral Science Institute or Radboud University (for example a dean, director or data officer) and (inter) national supervisory authorities (for example the Dutch Data Protection Authority and the Netherlands Board on Research Integrity). They are held to inspecting your data on a strictly confidential basis. You will be asked to grant permission for this access. If you refuse to do so, you cannot participate in the study.

2f. Additional information on your rights regarding the processing of your personal data

Radboud University is responsible for compliance with the General Data Protection Regulation (GDPR) when processing your personal data. The researcher ensures that your privacy and the conditions attached to it are safeguarded and he/she adheres to the Dutch code of conduct for scientific integrity and university policy regarding the storage and management of personal and research data when conducting this research. You have the right to withdraw your consent for the processing of your personal data at any time. Your personal data will then be deleted. You can find the Radboud University Privacy Statement at: <https://www.ru.nl/english/vaste-onderdelen/privacy-statement-radboud-university/>. If you have any questions about your privacy, please contact the Privacy Officer Faculty of Social Sciences (P.Janssen@socsci.ru.nl). For general questions, please contact the office of the Data Protection Officer of Radboud University via privacy@ru.nl. More information about your rights in the processing of your personal data can be found at <https://www.ru.nl/privacy/english/protection-personal-data/data-subjects-rights/> and on the website of the Dutch Data Protection Authority (<https://autoriteitpersoonsgegevens.nl/en>).

3. Findings that may be of personal clinical interest

The obtained research data will not be viewed from a medical and/or clinical perspective. Therefore, your participation in the study cannot be considered a medical/clinical test. In exceptional cases, new data can be obtained regarding your health such as scores that are viewed as worrying and/or that may be of personal clinical importance. In such cases, you

will be informed accordingly by the researcher (Fortesa Kadriu), up to a maximum of 1 month after participation in the study. If you do not wish to be informed on these findings, you cannot participate in the study.

4. Voluntary participation

Your participation in this study is entirely voluntary. If you decide not to participate, there will be no consequences. If, during the course of the research, you wish to withdraw your consent and terminate your participation, you have every right to do so at all times. Again, there will be no adverse consequences for you.

5. Compensation or remuneration

To thank you for your participation you will be granted 1.5 participation points (for RU Psychology students). At the end of the research, you will be granted the compensation.

6. Contact information

In case of questions, comments or worries do not hesitate to contact the responsible researcher of this study.

Fortesa Kadriu,

F.Kadriu@psych.ru.nl

Telephone number: +31 6 57 632 465

Radboud University, Behavioural Science Institute, Department of Clinical Psychology

CONSENT FORM

Hereby, I confirm that:

- I have been satisfactorily informed of the study in writing;
- I have read the written information;
- I have been given the opportunity to ask questions about the study;
- my questions have been answered satisfactorily;
- I have been given ample opportunity to think about participating in the study;
- I participate in the study entirely on a voluntary basis.

I understand that:

- I have the right to withdraw my consent at any time without having to state reasons and without fear of adverse consequences by contacting Fortesa Kadriu via f.kadriu@psych.ru.nl
- I have the right to have my research data deleted up until 1 month after the research has been completed
- I have the right to withdraw my consent for the (further) processing of my (specific) personal data; my personal data are processed in accordance with the applicable European privacy regulations;
- my personal data are processed in accordance with the privacy statement of Radboud University (<https://www.ru.nl/english/vaste-onderdelen/privacy-statement-radboud-university/>);

- the tests and questionnaires used are not medical/clinical tests, but the researchers nonetheless have an obligation to inform me about scores that may be of personal clinical interest.

I agree that:

- my personal and/or research data within this research will be obtained for scientific purposes and will be available for verification, reuse and replication for 10 years;

- the signed consent form with my personal data is kept for 10 years;

- my personal data, which are obtained for administrative purposes only, will be kept for a maximum of *[1 month]* after completion of the research. Administrative goals include: *[to invite you for further measurements during the course of this study]*

- supervisory authorities may inspect my personal and research data for the purpose of auditing the research.

In addition, I also give permission:

- for processing the following (special) personal data about me*: weight, height, age, name and e-mail address

YES	NO
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- that the researches contact me in case of clinical important scores*

YES	NO
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I understand that in order to participate in the study, I must answer ‘YES’ to all of the above points using an *asterisk*.

I agree to participate in the study.

YES	NO
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Dutch

INFORMATIEBRIEF

Voor deelname aan het wetenschappelijke onderzoek: Laat uw gewoonten u niet opeten!

1a. Doel van het onderzoek

U bent bij deze uitgenodigd deel te nemen aan een onderzoek. De studie heeft tot doel om oorzaken van verstoord eetgedrag te onderzoeken, zoals frequent diëten, te veel eten en verstoringen in het lichaamsbeeld. In deze studie onderzoeken we of het aanpakken van negatieve autobiografische herinneringen een effect heeft op het veranderen van iemands eetpatronen en overtuigingen over zichzelf. Om dit te onderzoeken, willen we vragenlijsten en een interventie voorleggen aan personen die mogelijk gewichtsproblemen en/of een negatief lichaamsbeeld hebben, maar nog niet gediagnosticeerd zijn met een eetstoornis.

1b. Het onderzoek

U wordt gevraagd eerst een screeningsvragenlijst in te vullen. Indien u een geschikte kandidaat blijkt te zijn voor het onderzoek, wordt u gevraagd om aanvullende vragenlijsten in te vullen. U kunt de vragenlijsten online invullen. Er wordt hiervoor per e-mail met u contact opgenomen. Vervolgens neemt u deel aan een interventie. Eén week na de interventie wordt u gevraagd om wederom vragenlijsten in te vullen. Het onderzoek is onafhankelijk getoetst door de Ethiek Commissie Sociale Wetenschappen (ECSW) van de Radboud Universiteit, en er is formeel geen bezwaar tegen dit onderzoek.

2a. Gebruik van uw persoonsgegevens

Voor de uitvoering van het onderzoek is het nodig dat uw persoonsgegevens worden verzameld, gebruikt en bewaard. Het gaat om de volgende gegevens: gewicht, lengte, leeftijd, naam en e-mailadres. Het gebruik en de opslag van uw persoonlijke gegevens zoals gewicht, lengte en leeftijd is nodig om uw body mass index (BMI) te berekenen. Uw naam en contactgegevens worden gevraagd om u uit te nodigen om deel te nemen aan de tweede en derde invulmomenten van vragenlijsten en/of omdat wij verplicht zijn u bij klinisch relevante bevindingen te informeren.

2b. Vertrouwelijkheid van uw gegevens en gegevensverwerking

De informatie die u verstrekt ten behoeve van het onderzoek wordt zorgvuldig behandeld en is alleen toegankelijk voor bevoegde medewerkers. Persoonsgegevens die de onderzoeker tijdens het onderzoek over u verzamelt, blijven vertrouwelijk. Om uw privacy te waarborgen slaat de onderzoeker uw persoonsgegevens gepseudonimiseerd op. Dat betekent dat uw naam en andere gegevens die u direct kunnen identificeren apart van de onderzoeksgegevens worden bewaard. Alleen middels een code of proefpersoonnummer is te achterhalen welke onderzoeksdata bij welke persoon hoort. De link tussen gegevens die u direct kunnen identificeren en de overige onderzoeksdata wordt opgeslagen in een sleutelbestand. Dit sleutelbestand wordt met wachtwoord beveiligd. Alleen bevoegde leden van het onderzoeksteam hebben toegang tot deze informatie. Andere partijen die bij het onderzoek betrokken zijn ontvangen geen gegevens die tot u te herleiden zijn. Ook in rapporten en publicaties over het onderzoek worden alleen uw geanonimiseerde onderzoeksgegevens vermeld.

2c. Bewaartermijn van uw gegevens

Het door u ondertekende toestemmingsformulier wordt gedurende 10 jaar na afronding van het onderzoek bewaard. Uw (geanonimiseerde) onderzoeksgegevens worden gedurende 10 jaar na afronding van het onderzoek bewaard. De koppeling tussen uw persoonsgegevens en uw onderzoeksgegevens wordt tot maximaal 1 maand na afronding van het onderzoek

bewaard. Dit betekent dat u tot maximaal 1 maand na afronding van het onderzoek kunt verzoeken om uw onderzoeksgegevens te laten verwijderen (door een mail te sturen naar f.kadriu@psych.ru.nl). Daarna kunnen uw onderzoeksgegevens niet meer verwijderd worden, aangezien deze alleen nog anoniem bewaard blijven. Wij weten dan dus niet meer welke onderzoeksgegevens bij u horen.

2d. Delen van uw gegevens

Vanwege het belang van controle, hergebruik en/of replicatie van onderzoeksresultaten worden onderzoeksgegevens (inclusief eventuele anonieme persoonsgegevens) in toenemende mate gedeeld met of openbaar gemaakt voor andere onderzoekers. Voorafgaand aan deze vorm van delen worden uw gegevens geanonimiseerd. Dit betekent dat u niet (meer) te identificeren bent op basis van de gegevens. Indien u niet wenst dat uw geanonimiseerde gegevens gedeeld worden, kunt u maximaal 1 maand na afronding van het onderzoek verzoeken uw gegevens te laten verwijderen.

2e. Inzagerecht van toezichthoudende autoriteiten ter controle van het onderzoek

Sommige personen en instanties moeten inzage kunnen hebben in uw persoons- en onderzoeksgegevens. Dit is nodig om te kunnen controleren of het onderzoek goed en betrouwbaar is uitgevoerd. Deze personen en instanties die ter controle toegang tot uw gegevens kunnen verkrijgen zijn onder andere: daartoe bevoegde personen binnen het Behavioural Science Institute of de Radboud Universiteit (bijvoorbeeld een decaan, directeur of datamanager) en (inter)nationale toezichthoudende autoriteiten (bijvoorbeeld de Autoriteit Persoonsgegevens en het Landelijke Orgaan Wetenschappelijke Integriteit). Zij zullen uw gegevens geheimhouden. U wordt gevraagd voor deze inzage toestemming te geven. Indien u dat niet wilt, kunt u niet deelnemen aan het onderzoek.

2f. Meer informatie over uw rechten bij de verwerking van uw persoonsgegevens

De Radboud Universiteit is verantwoordelijk voor de naleving van de Algemene Verordening Gegevensbescherming (AVG) bij de verwerking van uw persoonsgegevens. De onderzoeker ziet erop toe dat uw privacy en de daaraan verbonden voorwaarden gewaarborgd blijven en houdt zich bij het uitvoeren van dit onderzoek aan de Nederlandse gedragscode wetenschappelijke integriteit en aan universitair beleid voor opslag en beheer van persoons- en onderzoeksgegevens. U heeft altijd het recht om uw toestemming voor het verwerken van uw persoonsgegevens in te trekken. Uw persoonsgegevens worden dan verwijderd. De Privacyverklaring van de Radboud Universiteit kunt u nalezen op: <https://www.ru.nl/vaste-onderdelen/privacyverklaring-radboud-universiteit/>. Bij vragen over uw privacy kunt u contact opnemen met de Decentrale Privacy Manager van de faculteit Sociale Wetenschappen (P.Janssen@socsci.ru.nl). Voor algemene vragen kan contact opgenomen worden met het bureau van de Functionaris Gegevensbescherming van de Radboud Universiteit via privacy@ru.nl. Meer informatie over uw rechten bij de verwerking van uw persoonsgegevens kunt u vinden op <http://www.ru.nl/privacy/bescherming-persoonsgegevens/rechten-betrokkenen/> en op de website van de Autoriteit Persoonsgegevens (<https://autoriteitpersoonsgegevens.nl/nl/onderwerpen/avg-europese-privacywetgeving>).

3. Bevindingen die van persoonlijk klinisch belang kunnen zijn

De verkregen onderzoeksgegevens zullen niet vanuit een medisch en/of klinisch perspectief worden bekeken. Uw deelname aan het onderzoek kan dan ook niet worden gezien als een medische/klinische test. In uitzonderlijke gevallen kunnen er wel nieuwe gegevens worden verkregen betreffende uw gezondheidstoestand. U moet hierbij denken aan scores die zorgwekkend zijn en/of die van persoonlijk klinisch belang kunnen zijn. In dergelijke gevallen zult u hierover door de onderzoeker Fortesa Kadriu geïnformeerd worden, maximaal

1 maand na deelname aan het onderzoek. Als u hierover niet geïnformeerd wenst te worden, kunt u niet aan het onderzoek deelnemen.

4. Vrijwillige deelname

Uw deelname aan dit onderzoek is geheel vrijwillig. Als u besluit om niet deel te nemen aan dit onderzoek heeft dit geen nadelige gevolgen voor u. Ook tijdens het onderzoek heeft u altijd het recht om uw toestemming in te trekken en uw deelname te beëindigen. Dit heeft voor u geen nadelige gevolgen.

5. Vergoeding of opbrengst

Als dank voor uw deelname ontvangt u 1 proefpersoonpunt (voor RU psychologiestudenten). Aan het einde van het onderzoek ontvangt u deze vergoeding.

6. Contactinformatie

Bij vragen, opmerkingen of zorgen over deze studie, kunt u contact opnemen met de verantwoordelijke onderzoeker

Fortesa Kadriu,

F.Kadriu@psych.ru.nl

Telephone number: +31 6 57 632 465

Radboud University, Behavioural Science Institute, Department of Clinical Psychology

TOESTEMMINGSVERKLARING

Voor deelname aan het wetenschappelijke onderzoek: Laat uw gewoonten u niet opeten!

Ik bevestig dat:

- ik schriftelijk naar tevredenheid ben geïnformeerd over de studie;
- ik de schriftelijke informatie goed heb gelezen;
- ik in de gelegenheid ben gesteld om vragen te stellen over het onderzoek;
- mijn eventuele vragen naar tevredenheid zijn beantwoord; ik goed over deelname aan het onderzoek heb kunnen nadenken;
- ik uit vrije wil deelneem aan het onderzoek.
-

Ik begrijp dat:

- ik het recht heb om mijn toestemming op ieder moment weer in te trekken zonder opgave van redenen en zonder dat dit nadelige gevolgen voor mij heeft, door contact op te nemen met Fortesa Kadriu via f.kadriu@psych.ru.nl.
- ik het recht heb op vernietiging van mijn onderzoeksgegevens tot 1 maand na afronding van het onderzoek;
- ik het recht heb om mijn toestemming voor de (verdere) verwerking van mijn (bijzondere) persoonsgegevens in te trekken;
- mijn persoonsgegevens worden verwerkt volgens de geldende Europese privacyregelgeving;
- mijn persoonsgegevens worden verwerkt volgens de privacyverklaring van de Radboud Universiteit (<https://www.ru.nl/vaste-onderdelen/privacyverklaring-radboud-universiteit>);
- de testen en vragenlijsten die worden afgenomen geen medische/klinische testen zijn, maar dat de onderzoekers wel verplicht zijn om mij te informeren over scores die van persoonlijk klinisch belang kunnen zijn.
-

Ik stem in dat:

- mijn persoons- en/of onderzoeksgegevens binnen dit onderzoek voor wetenschappelijke doelen worden verkregen en gedurende 10 jaar beschikbaar zullen zijn voor controle, hergebruik en replicatie;

- het ondertekende toestemmingsformulier met mijn persoonsgegevens gedurende 10 jaar wordt bewaard;
- mijn persoonsgegevens welke uitsluitend voor administratieve doelen worden verkregen tot maximaal 1 maand na afronding van het onderzoek worden bewaard. Administratieve doelen houden onder meer in: om u te kunnen uitnodigen voor verdere metingen tijdens dit onderzoek; voor de controle van het onderzoek toezichthoudende autoriteiten mijn persoons- en onderzoeksgegevens kunnen inzien.

Daarnaast geef ik ook toestemming:

- Voor het verwerken van de volgende (bijzondere) persoonsgegevens over mij: gewicht, lengte, leeftijd, bijnaam en emailadres

JA	NEE
----	-----

- Dat de onderzoekers contact met mij opnemen bij scores die mogelijk van persoonlijk klinisch belang kunnen zijn *

JA	NEE
----	-----

I understand that in order to participate in the study, I must answer ‘YES’ to all of the above points using an *asterisk*. Ik begrijp dat ik om deel te nemen aan dit onderzoek “JA” moet antwoorden op alle bovenstaande punten met een *ster*.

Ik stem toe aan deelname bij dit onderzoek.

JA	NEE
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