Is it dangerous to fantasize revenge in imagery exercises? An experimental study
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ABSTRACT
Background: Imagery rescripting (ImRS), i.e. changing intrusive mental images in imagery, is increasingly recognized as a helpful therapy technique. In ImRS exercises, patients sometimes suggest taking violent revenge on perpetrators. However, it is unclear whether vengeful phantasies can be particularly helpful in giving back feelings of power and control, or whether they rather increase aggressive feelings, with potentially harmful effects.

Methods: Forty-six healthy participants watched 3 trauma movie segments depicting interpersonal violence. After each movie, one of 3 ImRS strategies (ImRS with violent revenge, ImRS without violence, safe place imagery) was applied. Dependent variables were subjective emotion ratings.

Results: Aggressive and positive emotions changed most strongly with the safe place image, no differences between ImRS with and without violence were observed. Sad and anxious emotions were not differently influenced by different strategies.

Limitations: Only a healthy sample with no previous display of aggression has been investigated. Cross-over effects cannot be excluded due to the within-group design with repeated trauma movie segments.

Conclusions: Using violent pictures in ImRS does not seem to be particularly risky as it does not increase aggressive emotions in the participants; however it has no added value. For the purpose of emotion regulation after an analog trauma, the safe place imagery does best.

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studies suggest that revenge images work as a short term coping strategy for feelings of rage and helplessness after traumatization. Nevertheless revenge fantasies seem to be dysfunctional in the long run as they do not really reestablish self-efficacy and self-esteem and may evoke feelings of guilt and shame which lead to social retreat. Moreover RF often have ruminative features and are therefore likely breeding grounds for further RF. (Gabler & Maercker, 2011). We do not know yet how to overcome persistent revenge fantasies in therapy. Processing those prohibited fantasies in ImRS exercise might be a possible way. Furthermore, in rescripting very severe traumatic situations, violence against the perpetrator sometimes appears to be the most obvious solution to reestablish safety for the patient.

However, using revenge fantasies in ImRS may be dangerous, as they could lead to a disinhibition of aggression. Studies show that fantasized actions can increase the future probability of actually acting in the fantasized way for behaviors like voting or exercising (Gregory, Cialdini, & Carpenter, 1982; Libby, Shaeffer, Eibach, & Sliemmer, 2007; Milne, Rodgers, Hall, & Wilson, 2008). Nagtegaal, Rassin, and Muris (2006) found that aggressive fantasies can be related to aggressive behavior in healthy subjects. Such fantasies might take the form of a “social cognition” in which aggressive behavior patterns are created (Gutura, Hegemoller, & Spinnfeld, 2003; Hummert & Eron, 1984). Violent ImRS may thus be comparable to a “rehearsal” of aggressive patterns and increase the risk of actual aggressive acting-out. Moreover, Bushman (2002), Bushman, Baumeister, and Phillips (2001) showed experimentally that making people believe in the value of catharsis and venting anger leads to more aggressive reactions. Accordingly some clinicians warn of the possible correlates of aggressive mental images and the possible negative outcomes of cathartic processes (Lenning, 1996).

On the other hand, the use of violent fantasies in ImRS exercises may be helpful to process emotional responses which had been inhibited in the traumatic situation. They can help to fulfill emotionally underlying needs, enhance self-efficacy, and overcome helplessness, victimization, and avoidance. Clinically this is related to increased feelings of power and self-efficacy, as opposed to feelings of helplessness and being at the perpetrators mercy in the original situation (Haen & Weber, 2009). Revenge fantasies can stabilize self-esteem, reduce shame and restore balance in relationships (Alibhai, 2009). This is consistent with the social psychological model of revenge as a message to the perpetrator (Gollwitzer, Meder, & Schmitt, 2011). According to this model, revenge can stabilize self-esteem and reduce shame. Within this model, revenge does not only serve the aim of rebuilding balance in a relationship (Frijda, 1994), but also it can be a way to exert behavior control by reducing injustice.

In the present study we investigated the effect of ImRS exercises with taking revenge on the perpetrator as compared to ImRS with non-vengeful content, as emotion regulation strategy after a traumatic movie clip. Both strategies were compared in regard to their effects on negative emotions induced by trauma film. Moreover both strategies were compared to another relevant clinical imagery strategy with a non-stimulus related content — the safe place imagery. We conducted an experimental analog trauma film study with a healthy student sample as a first step into this issue. As aggressive acting-out is much more frequent in males than in females (Archer, 2004), a mixed sample with regard to gender was recruited. We expected all strategies to have a significant effect on self-rated emotions. Furthermore it was hypothesized that ImRS with revenge fantasies does not increase aggression compared to ImRS without revenge fantasies or the safe place image.

2. Methods

2.1. Procedure

In this study the trauma film paradigm was applied (Holmes & Bourne, 2008). This paradigm is a typical, well reviewed tool for investigating analog peri-traumatic processes. Participants were informed about the study, particularly about the violent content of the experimental stimuli, the trauma film. Participants filled in the following questionnaires after giving informed consent. A short 9-item version of the SCL-90R (SCL-K9, Klaghofer & Brähler, 2001) was used to assess general psychopathology. In this 9-item questionnaire participants rate, to which extent they suffered from psychological distress in the past week from 1 (not at all) to 5 (very much). The SCL-K9 shows good validity and reliability and is therefore a suitable instrument to screen for psychopathology (Klaghofer & Brähler, 2001). Anger was assessed with the State Trait Anger Expression Inventory (STAXI, Spielberger, Sydeman, Owen, & Marsh, 1999). The STAXI is an economic 44-item questionnaire comprised of five anger scales (state anger, trait anger, anger in, anger out, anger control) on a four point scale (e.g. 1 (not at all)—4 (very much)). The instrument is broadly used and shows good validity and satisfying reliability (Spielberger et al., 1999). Habitual use of mental imagery was assessed with the Spontaneous Use of Imagery Scale (SUIS; Reisberg, Pearson, & Kosslyn, 2003). This unpublished scale comprises 12 items to which the participant has to indicate the level of agreement from 1 (never appropriate) to 5 (completely appropriate) (Reisberg et al., 2003).

In the actual experiment, the participants watched three different movie segments (ca. 5 min each) depicting interactions including physical, sexual, and psychological violence against helpless victims. After each movie, one of three imagery strategies was applied and audiotaped. While movie segments occurred always in the same order, order of imagery strategies was pseudo-randomized. This within-group design was chosen to minimize group differences across conditions. Furthermore, since each trial lasted only about 10 min, subjects were easily able to follow the instructions. Before and after the movie, as well as after the imagery strategy, participants rated their current experience of 9 different emotions and states (angry emotions: anger, rage, aggression; sad/anxious emotions: sadness, helplessness, anxiety; positive emotions and states: joy, relaxation, safety) on 10 cm visual analog scales (0 = not at all; 10 = very intense). Angry and sad/anxious emotions were selected because they are mainly treated in ImRS exercises. Positive emotions and states were chosen because they represent the target states of ImRS. Trials were separated by 5–10 min breaks, with the next trial starting when the participant declared to feel relaxed again. Fig. 1 gives an overview of the experimental procedure. One day later at the end of the experimental session, participants watched pictures of the three movie perpetrators on the internet and rated their personal levels of helplessness, rage, and distress on a scale from 0 to 100 (0 = not at all; 100 = very intense). The study was approved by the local ethical committee.

2.2. Participants

We recruited a healthy student sample. Participants were asked in an open question for prior traumatic experiences to avoid retraumatization by the stimulus material. In case of a positive response, participants were asked if they had any objections against watching movie segments with traumatic content. N = 48 students (53% female; 71% psychology students) participated in the study. Eight participants reported prior experiences as victims of violence However, none of these subjects rejected participation in
the study or had to stop the experiment prematurely. Two subjects rated all emotions at all assessments close to zero and were excluded from further analysis, resulting in \( n = 46 \) participants. Psychometric data indicated low psychopathology and rather low anger scores (see Table 1). No gender differences were found regarding psychometric data.

### 2.3. Mood induction

Movie segments for mood induction were taken from three different commercial movies. Each segment induced intense negative feelings and had duration of about 5 min. In the movie *Funny Games* (Haneke, 1997), two unknown perpetrators torture an innocent family to death. The movie *Sleepers* (Levinson, 1996) shows how boys in a juvenile prison are physically, sexually, and emotionally abused by their guards. In the movie *The Girl with the Dragon Tattoo* (Oplev, 2009), a young woman with psychological problems is emotionally and sexually abused by her legal guardian.

### 2.4. Imagery strategies

During all imagery strategies, participants kept their eyes closed and were asked to act creatively in imagery. Imagery strategies were guided by the experimenter. Each strategy started with a relaxation instruction. Next, the participant was asked to go back into the movie, as if participating, and enter the worst scene and try to change the situation in a way that was helpful for the victim. In the ImRS without violence condition, participants were asked to help the victim with any means except violence. In the safe place condition, participants were asked to leave the situation and enter a positive and safe situation instead, such as being at a wonderful beach, or any other safe place. In each condition the participants were instructed to vocalize the imagined scenes to ensure experimental control for adherence of the respective imagery strategy. All imagery exercises ended when the participants reported a reduction of the negative emotions.

### 2.5. Statistical analysis

The course for ratings of emotion was analyzed with multilevel analysis with time and imagery strategy as fixed factors and a random intercept. Since three-way interactions emotion \( \times \) time \( \times \) strategy were significant when several emotions were entered as dependent variables, analysis was run separately for each emotion as dependent variables. Further analyses were conducted with gender and intensity of imagined violence respectively as additional fixed factor to test for the influence of these variables. These analyses were conducted for each imagery strategy separately. Differences in ratings of the perpetrator picture one day later were analyzed with ANOVA. The statistical software package IBM SPSS Version 20 was used.

### 3. Results

#### 3.1. Manipulation check

##### 3.1.1. Emotion induction

As expected, all movie segments significantly induced intense negative emotions and strongly reduced positive emotions, although the film clips differed in regard to the intensity of the induced emotion. Fig. 2 gives an overview of the course of emotions from t1 to t3, separately for angry, sad/anxious, and positive emotions.

##### 3.1.2. Strategies

Participants were generally able to follow the instructions and realize different imagery strategies as instructed. However, from a qualitative perspective, participants differed with regard to the intensity of violence exerted in the ImRS with revenge condition. Some were rather reluctant to exert revenge in imagery, while others spontaneously developed cruel images without any restraint.

#### 3.2. Effects of strategy

Fig. 3 displays the course of each emotion before and after the imagery exercise depending on strategy.

The main effect for time was highly significant in all analyses. In some emotions, the main effect for strategy became significant. However, this was only true when the interaction time \( \times \) strategy was significant, as well. Since the latter is the effect of main interest, only these results are reported in detail. In summary, the interaction effect time \( \times \) strategy was significant in all analyses with anger emotions as dependent variable (anger, rage, aggression), in 2 out of 3 analyses with positive emotions (happiness, relaxation), but not in the analyses with sad/anxious emotions.

##### 3.2.1. Aggressive emotions

In anger, contrasts revealed stronger decrease of anger in the safe place strategy as compared both to ImRS with violence \( (b = 1.46; p = 0.011) \) and without violence \( (b = 1.24; p = 0.030) \).
In rage, contrasts showed a significant difference only between the safe place and ImRS without violence ($b = 1.60; p = 0.004$). In aggression, safe place was significantly more effective than ImRS with violence ($b = 1.92; p = 0.001$) and without violence ($b = 1.71; p = 0.004$).

3.2.2. Positive emotions/states

Similarly, the safe place increased relaxation more than ImRS with violence ($b = -1.75; p = 0.001$) and ImRS without violence ($b = -1.96; p < 0.001$). In joy, again the safe place outperformed ImRS with violence ($b = -1.44; p = 0.003$) and ImRS without violence ($b = -2.28; p < 0.001$); in addition, a trend toward higher increase of joy by ImRS with violence as compared to ImRS without violence was observed ($b = -0.85; p = 0.067$).

3.2.3. Follow up assessments

No differences were found in ratings of helplessness, rage, and distress when watching pictures of the perpetrators at the end of the experiment and one day later.

3.3. Other effects

3.3.1. Gender

Only very few significant effects were found for gender as a fixed factor. With regard to safety, a main effect for gender was found in ImRS both with revenge ($b = 4.85; p = 0.013$) and without revenge ($b = 4.81; p = 0.028$) indicating that women felt overall less safe. In helplessness, a main effect for gender ($b = -5.92; p = 0.015$) and an interaction effect gender * time was found ($b = -2.11; p = 0.025$) indicating that women felt significantly more helpless after the movie, however helplessness decreased in women more than in men through the imagery strategy. In no other emotion or strategy, main or interaction effects for gender were significant.

3.3.2. Other effects

Habitual imagery, prior traumatization, psychopathology and trait anger had no significant or systematic influence on any of the dependent variables.

4. Discussion

In the present study we investigated the effect of ImRS with revenge fantasies as compared to ImRS without revenge fantasies and an image of the safe place as control condition. Therefore the emotions of healthy participants after watching traumatic movie segments were assessed. The trauma film paradigm was applied to induce analog trauma. The safe place strategy reduced all angry emotions (anger, rage, aggression) and increased 2 of 3 positive emotions (happiness, relaxation) more strongly than both ImRS conditions. No effects for strategy were apparent for sad and anxious emotions (sadness, anxiety, helplessness). No significant differences contrasts were found between ImRS with and without revenge, apart from a trend ($p = 0.067$) in favor of ImRS with revenge for joy. At the end of the session and one day later, no differences in ratings of perpetrator pictures were found.

These results do not suggest a particular risk when revenge fantasies are used within ImRS exercises, which was the main question being studied. However, no specific advantage could be observed for ImRS with revenge as compared to non-violent ImRS. This applies to both sexes, since we found only marginal gender differences. Furthermore, the superior effect of the safe place imagery was surprising. In this context, imagery escape strategies may indeed be more helpful for decreasing distress in short term, since distressing images are avoided. These findings are supported by Noeker and Petermann (2011) for whom positive imagery e.g. daydreaming, can also function in the sense of dissociation. It can help the patient to tolerate situations of emotional distress but with severe consequences for psychopathology in the long term. Another explanation for the positive results of safe place imagery can derive from the findings of Holmes, James, Coode-Bate, & Deeprose (2009), who found that a competing visuospatial task after trauma film led to less intrusions. Safe place strategy in our experiment could represent a competing visuospatial task, since it does not contain trauma stimulus material. Moreover research in debriefing treatment after trauma exposure suggests that dealing intensively with the traumatic images, immediately after traumatization, is not helpful in the long run (Van Emmerik, Kamphuis, Huisbosch, & Emmelkamp, 2002). However note that ImRS has not been tested as treatment against flashbacks or other disturbing mental images, but rather as an emotion regulation strategy after a distressing experience. We investigated a healthy sample with no previous traumatization. In a more disturbed sample ImRS might be superior to safe place, because dysfunctional, biographic core beliefs and feelings are affected and changed.

In summary, our results are in favor of a flexible approach in ImRS, allowing vengeful fantasies when the patient is aware of...
Fig. 3. Effect of intervention in 9 different emotions in \( n = 48 \) healthy participants, t2: before imagery strategy, t3: after imagery strategy; solid line: safe place image; dotted line: ImRS with violence; interrupted line: ImRS without violence; **: \( p < 0.01 \); +: \( p < 0.1 \).
them. However, the study has several limitations. Firstly, a healthy sample was investigated, and only very cautious conclusions can be drawn from our findings to a more disturbed sample with actual distressing mental images. In particular we did not investigate participants with prior display of actual aggressive acting-out. In a patient sample one. From a methodological perspective, it would have been desirable to assess behavioral measures of aggression as an additional dependent variable, as well. Furthermore a completely neutral control condition is lacking. Moreover the stimuli differed in their power to increase negative emotions. The approach to control this limitation was the randomized assignment of the imagery strategies to the film clips. Furthermore, the repetition of analog trauma may have led to cross-over effects and strategy adherence was not checked by independent raters. As mentioned, lnRS was not tested for its long-term effects on intrusions or flashbacks form the analog traumas but rather as strategy to regulate emotion. The duration of imagery strategies was not standardized. However, since imagery exercises differed between individuals, standardization was not possible. Furthermore only three emotions were assessed one day later. The lack of significant differences between strategies could be due to relatively weak stimuli, than to actual lack of difference between the different strategies. Future studies should investigate the issue in real patients as a real treatment approach.

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References


