The Role of Mental Images in the Treatment of Emotional Dysregulation in Borderline Personality Disorder: Feasibility of a New Short Intervention

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BACKGROUND:

Deviations of affective loaden mental images are of transdiagnostic relevance for diverse dysfunction across mental disorders. First, mental images are more emotionally evocative than pure verbal thoughts (Holmes & Mathews, 2010). Second, mental images as compared to verbal thoughts direct future behavior more strongly (Libby et al. 2007). Recent studies have shown a link between the occurrence of emotional dysregulation and the frequency of mental images related to such past maladaptive behaviors. For example, among college students a positive association was found between non-suicidal self-injury (NSSI) and mental images of past NSSI that proceeded such behavior (McEvoy et al. 2017). In addition, increased suicidal ideation has been related to proceeding mental images of future suicidal acts, so-called "flash-forwards" (Crane et al. 2012). Within borderline personality disorder (BPD), emotional dysregulation and related dysregulated behaviors such as NSSI or impulsive acts as binge-eating or careless driving represent core features of the disorder. Research findings indicate increased rates of NSSI-related mental images among patients with BPD (Schaitz et al. 2018). The prevalence rates indicate that imagery-based techniques might be worthy of investigation. For this purpose, we developed a two-session treatment program of imagery rescripting and rehearsal (IR) targeting mental images related to emotional dysregulated behaviors in patients with BPD. Feasibility in terms of treatment acceptance and safety was evaluated.

Figure 1: Pre-/Post-design with 1-year follow up

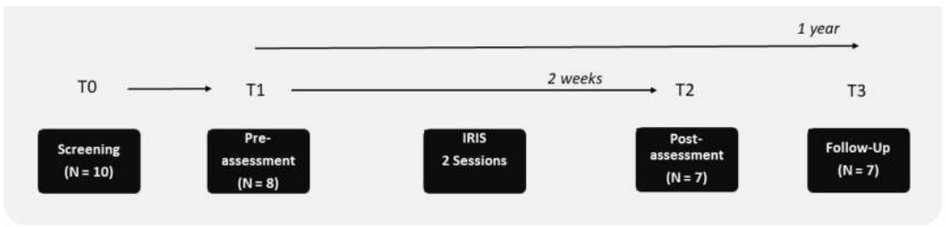
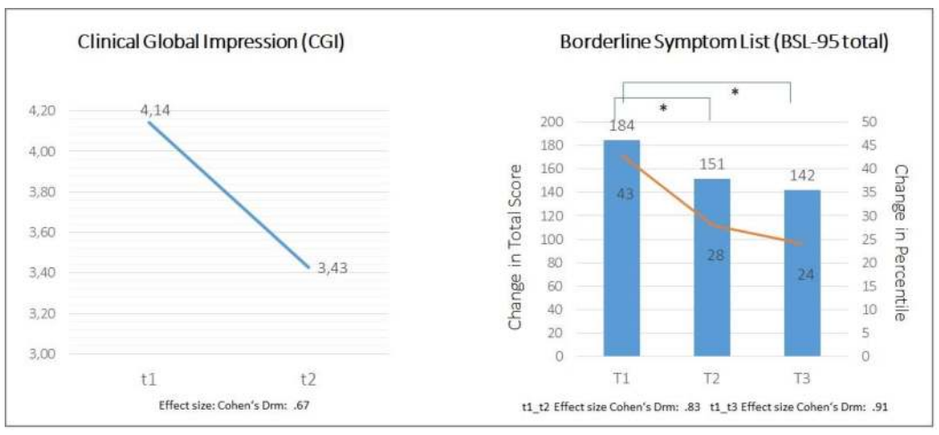


Figure 2: Safety according to overall symptom change



RESULTS:

Acceptance of treatment protocol: All patients allocated to the treatment appeared to both treatment sessions. One patient dropped-out at the beginning of session 2 (drop-out rate from session 1 to session 2 = 12.5%). No drop-out rate from session 2 to 1-year follow-up was recorded. On average, patients practiced their homework of imagery rehearsal 4.2 days/week.

Safety of treatment protocol: No increase of overall symptoms was recorded (Figure 2). For CGI a trend to symptom reduction was observed (Wilcoxon-Test: Z= -1,667, p = 0,094). No significant symptom change over time was observed for BSL-95 total score (Friedmann-Test: $\chi 2$ = 3,714 p=0,18). However, pair-wised post-hoc comparisons revealed a substantial symptom reduction from T1 to T2 (Wilcoxon-Test: Z= -1,690, p = 0,055) as well as from T1 to T3 (Wilcoxon-Test: Z= -1,859, p = 0,039) with high Cohen's effect sizes of d_{mr} = 0.83 and d_{mr} = 0.91, respectively. In addition, no negative change related to emotion regulation was recorded (Figure 3). Cognitive reappraisal over time according to ERQ improved significantly ($\chi 2$ = 9,769 p=0,005**, df=2, Kendall's W = .70). According to FEEL-E, adaptive emotion regulation strategies showed a trend to improvement (Friedman-Test: $\chi 2$ = 5,497 p=0,072, df=2, Kendall's W = .39), whereas maladaptive strategies did not change (Friedman-Test: $\chi 2$ = 2,571 p=0,305, df=2, Kendall's W = .18). Frequencies of dysregulated behaviors were reduced to about 50% from T1 to T2, however, at a 1-year follow-up they returned to baseline. 5 out of 7 patients showed either a decline or no relevant change in frequency of dysregulated behaviors (Figure 4).

METHODS:

Sample and procedure: After an initial screening (N=10) 7 female patients with BPD were consecutively treated and became two weekly sessions with an average duration of 95 minutes. Directly after the last session, post-assessment was conducted; 1-year follow-up was obtained (see Figure 1). Inclusion criteria: BPD diagnosis; occurrence of NSSI-related mental imagery. Exclusion criteria: substance dependency, lifetime schizophrenia, schizoaffective disorder or bipolar disorder. **Diagnostic interviews and measurements:** Diagnosis were assesses based on SKID-II-interview and M.I.N.I. Emotional regulation strategies were assessed based on self-reported measures FEEL-E and ERQ. BPD symptom severity and emotional dysregulated behaviors were assessed based on BSL-95. **Two-session treatment of imagery rescripting and rehearsal:** Psychoeducation about mental imagery and the technique of IR; Reconstruction of the mental image related to the dysregulated behavior (e.g. self-injury) including all relevant sensory elements; Transformation of distressing mental images into more benign entities so the patient imagines him-/herself in a coping situation. Between session 1 and 2 daily homework of imagery rehearsal.

Figure 3: Safety according to change in emotion regulation

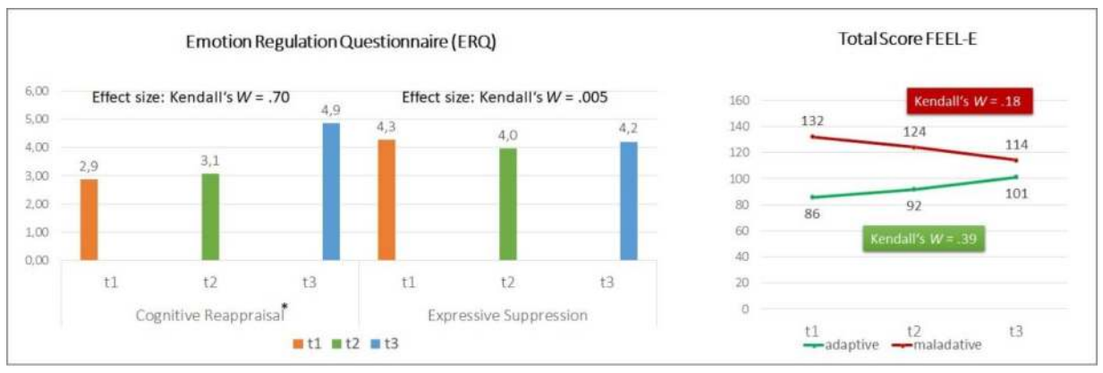
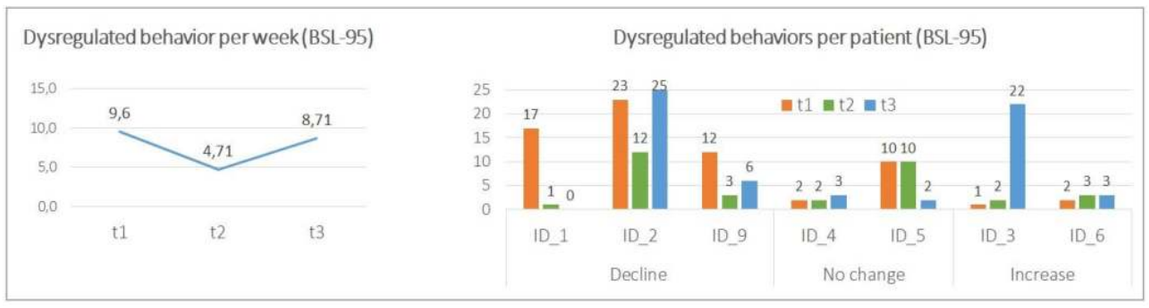


Figure 4: Safety according to change in dysregulations behaviors



LITERATURE:

McEvoj, Hayes, Hasking & Rees (2017). Thoughts, images, and appraisals associated with acting and not acting on the urge to self-injure. J Behav Ther Experim Psychiatr. 57: 163-171. *Crane, Sha, Barnhofer & Holmes (2012).* Suicidal imagery in a previously depressed community sample. Clinical Psychol Psychother, 19: 57-69. *Holmes, Mathews (2010).* Mental imagery in emotion and emotional disorders. Clinical Psychol Rev, 27:226-239. *Libby, Schaeffer, Eibach & Slemmer (2007).* Picture yourself at the polls: Visual perspective in mental imagery affects self-perception and behavior. Psychol Sci, 18: 199-203. Schaitz, *Kröner, Maier & Sosic-Vasic (2018).* I feel lonely – Emotions and mental images associated with self-harming behavior in borderline personality disorder. Nervenheilkunde, 37(12): 885-890.

CONCLUSION:

Data from our feasibility study suggest that this short-term intervention is save and acceptable for patients suffering from BPD. No symptom exacerbation was observed, while drop-out rates were acceptably low. This two-session program has the potential to modulate emotion regulation strategies and self-harming behavior in BPD. However, results are limited by the very small sample size, and the lack of a control group. Future evaluation within a randomized-controlled trial is needed.