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## When do trauma experts choose exposure therapy for PTSD patients? A controlled study of therapist and patient factors

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### ABSTRACT

To investigate when and why therapists opt for or rule out imaginal exposure (IE) for patients with posttraumatic stress disorder (PTSD), 255 trauma experts were randomized to two conditions in which they were presented with four cases in which the patients' comorbidity and treatment preferences were manipulated. The results confirmed IE to be an underutilized approach, with the majority of professionals being undertrained in the technique. As predicted, the patient factors influenced the expert's choice of therapy: in case of a comorbid depression, IE was significantly less preferred than medication. Also, IE was significantly more likely to be offered when patients expressed a preference for trauma-focused treatment. The therapist factors were also found to be importantly related to treatment preferences, with high credibility in the technique being positively related to the therapists' preference for IE. Perceived barriers to IE, such as a fear of symptom exacerbation and dropout, were negatively related to the perceived suitability of the treatment when patients had suffered multiple traumas in childhood. The results are discussed in the light of clinical implications and the need of exposure training for trauma professionals.

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Despite the strong evidence for the efficacy of exposure techniques in the treatment of posttraumatic stress disorder (PTSD; Cahill, Rothbaum, Resick, & Folette, 2009), the approach is underutilized in clinical practice (Becker, Zayfert, & Anderson, 2004; Rosen et al., 2005). In their survey, Becker et al. (2004) showed that a large majority (83%) of the 207 licensed doctoral-level psychologists questioned never opted for exposure therapy to treat their PTSD patients. But what are the reasons for this underutilization? Why do therapists fail to exploit exposure-based treatments for this population in spite of their proven effectiveness? Which therapist-related and patient-related factors are implicated here and how do they interact (Becker, Darius, & Schaumberg, 2007)? Although mostly explorative in nature, some studies have begun to delineate predictive factors of clinicians' treatment preferences. To add to the existing knowledge, apart from a comprehensive therapist survey, we conducted a controlled study among experts working in this trauma field in which we evaluated the effects of several therapist and patient factors on the

preference for one of four recommended and widely used treatments for PTSD.

### Therapist factors

Training in and experience with exposure for PTSD are likely to influence the decision to use the approach. When Becker et al. (2004) asked the practising psychologists in their survey to rate these two factors, they found that only 31% had had formal training in the use of imaginal exposure (IE) and that this group was more likely to report current use of the technique than the untrained respondents. When asked to list the factors that prevented them from using IE, the respondents indicated limited training (60%) as the most important factor. Sprang, Craig, and Clark (2008) found that specialized trauma training resulted in a more frequent use of trauma-specific treatment approaches (among which exposure) as opposed to no preference for a treatment approach.

Another factor likely to influence the decision to use exposure is its perceived credibility, i.e., the way the therapist interprets the rationale and effects of the technique and his or her personal stance towards it. Although some studies showed that the patient's confidence in and preference for the treatment was related to the therapist's choice for prolonged exposure therapy (see e.g.,

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Zoellner, Feeny, Cochran, & Pruitt, 2003), few studies have directly addressed associations between the therapist's views of and his/her use of the approach. Frueh, Cusack, Grubaugh, Sauvageot, and Wells (2006) did study clinicians' perspectives on cognitive behavioural therapy (CBT) for PTSD and found that many of the respondents reported a fear of addressing the trauma directly (also see Waller, 2009) and that they had little faith in their ability to help PTSD patients effectively using exposure techniques. Devilly and Huthner (2007), moreover, observed that especially inexperienced therapists found exposure therapy less credible than cognitive therapy, decreasing the likelihood that they would choose a trauma-focused approach like exposure.

In addition to low treatment credibility, the barriers therapists perceive to exposure might also inhibit their use of the technique. These include the often-noted perception that exposure techniques are more distressing than other interventions (Devilly & Huthner, 2007), that they may exacerbate symptoms (Frueh et al., 2006) especially in patients with comorbid disorders (Becker et al., 2004), or that exposing patients to their traumas will lead to treatment dropout and revictimization (Cahill, Foa, Hembree, Marshall, & Nacash, 2006; Cook, Schnurr, & Foa, 2004; Ruscio & Holohan, 2006). There are also practitioners who believe that exposure techniques are only suitable for survivors of discrete or single-incident traumas and that these survivors must be relatively stable and healthy (Cook et al., 2004; Ruscio & Holohan, 2006). In Becker et al.'s (2004) survey, clinicians reported fewer barriers to exposure when they were more experienced in treating PTSD patients.

Finally, Sprang et al. (2008) found the therapist's sex to be a determinant in treatment preference: compared to their male counterparts, female therapists were less likely to avail themselves of CBT including exposure, while Devilly and Huthner (2007) observed that the female respondents estimated the distress caused by exposure as more severe than the male respondents.

### Patient factors

Patient variables, such as comorbidity and treatment preference may also be of importance in the therapists' choice of treatment. Becker et al. (2004) reported that a large number of clinicians (37%) saw any comorbid diagnosis as a likely contraindication for exposure (IE) for PTSD. Exploring patient preferences for exposure versus medication, Zoellner, Feeny, and Bittinger (2009) reported a similar trend: fewer therapists opted for exposure when PTSD patients had a concurrent depression. Najavits (2006) observed that clinicians rated present-focused treatment (e.g. supportive counselling) more positively than past-focused treatment (e.g. exposure therapy) for PTSD patients with comorbid substance abuse.

The patient's preference for a particular treatment may also be important in determining the clinician's choice of treatment, with several studies suggesting that PTSD patients may be more receptive to exposure than is indicated by current clinical practice utilization rates. In two studies, women with and without PTSD preferred prolonged exposure to medication (sertraline; Angelo, Miller, Zoellner, & Feeny, 2008; Cochran, Pruitt, Fukuda, Zoellner, & Feeny, 2008), which is in line with findings that trauma victims in general seem to prefer a psychological treatment (counselling) to medication (Roy-Byrne, Berliner, Russo, Zatzick, & Pitman, 2003). Also when other alternative (psychological) treatment options were offered, respondents in an analogue study showed a strong preference for CBT-based treatments, including exposure, despite the high levels of discomfort anticipated with exposure (Tarrrier, Liversidge, & Gregg, 2006). These results were replicated in the analogue study by Becker et al. (2007), in which the respondents predominantly indicated exposure or another CBT

variant as the therapy of choice over other treatments including supportive therapy, Eye Movement Reprocessing and Desensitization (EMDR) and medication. It must be noted, however, that these 'patient preference' studies not always concerned actual PTSD patients; some included participants who had been traumatized but did not develop PTSD, or respondents who were presented with 'what if' cases. This may have important implications for the reported treatment preference outcomes and thus complicates the interpretation of the results. For instance, in the Becker et al. (2007) study, the patients' preference for exposure therapy was less pronounced when the data of the PTSD patients were analyzed separately. Possibly, avoidance symptoms typical of this population negatively affected the patients' willingness to undergo exposure treatment. Finally, the credibility of a treatment (Becker et al., 2007; Zoellner et al., 2003), personal positive reactions to a treatment (Becker et al., 2007), the assumed underlying mechanisms of a treatment (e.g. "I have to talk about it"; Angelo et al., 2008), and treatment effectiveness (Cochran et al., 2008) were all found to be related to the patients' preference for exposure-based therapies.

In view of the notion that, despite its proven effectiveness, exposure therapy is underutilized in the treatment of PTSD, the aim of the present study was to examine which therapist and patient factors foster or inhibit the choice for exposure therapy in trauma professionals working in this field. To this end we first explored whether the participating therapists (1) used exposure therapy in their practice, (2) were trained in the treatment approach, (3) regarded the therapy as credible, (4) perceived barriers preventing them from offering the therapy in their practice, and finally (5) whether these variables differed between male and female therapists. We subsequently examined if and how the use of and training in exposure techniques were related to treatment credibility and perceived barriers. To determine whether these relationships were specific to exposure therapies, we included three other guideline-recommended or well-known PTSD treatments in our survey: EMDR, another trauma-focused treatment internationally recommended for PTSD (Foa, Keane, Friedman, & Cohen, 2009), and two non-trauma-focused treatments: pharmacotherapy, which is also mentioned in PTSD treatment guidelines, and present-centred supportive counselling, a widely used treatment approach not specifically included in official PTSD treatment guidelines but yielding positive effects (see Mc Donagh-Coyle et al., 2005; Schnurr et al., 2007). Because it is underutilized in PTSD, we expected the participating therapists to use exposure therapy less often relative to the other treatment options and to be less (well) trained in the approach, and that they would consider exposure therapy less suitable (reflecting low treatment credibility) for and see more barriers to its use in this population. We also hypothesized that the therapists that were (better) trained in the technique and more experienced in its use in PTSD patients would find the approach more suitable (reflecting high treatment credibility) and mention fewer or less prohibitive factors.

In the second, experimental part of our study we presented 255 trauma experts with four videotapes each showing a PTSD patient. Having viewed a tape, the therapists were asked to indicate on a list specifying the four treatment options to what extent they thought the treatment would be suited for this particular patient. In addition, we manipulated the choice of treatment by randomizing the respondents to two conditions in which the patient variables 'comorbid depression' and 'patient preference' were introduced. Because trauma type and trauma severity are known to influence treatment preferences, each condition included two types of trauma: (1) a single trauma suffered in adulthood and (2) multiple traumas suffered during childhood. We expected a comorbid

diagnosis to generate a lower therapist preference for exposure and the patient's preference for exposure a higher therapist preference for the treatment. As to the therapist factors, we expected more training in exposure, higher credibility ratings and fewer perceived barriers to be associated with a higher preference for exposure therapy, with male therapists having a stronger preference for exposure than female therapists.

## Method

### Participants

A total of 296 trauma experts took part in our study conducted during the 2008 Annual NtVP Conference (the 'Nederlandstalige Vereniging voor Psychotrauma'; the Dutch–Flemish Association for Psychotrauma). Forty-one participants (13.8%) did not consent to their contribution being used for research purposes. The final sample thus consisted of 255 participants: 84 men and 167 women (with four respondents not specifying their sex), with an average age of 48.83 (SD = 9.83). All participants were trauma professionals. The majority (45.9%) noted psychologist/psychotherapist as their primary profession, 12.5% were psychiatrists/physicians, 14.9% social workers/social psychiatric nurses, and 26.7% indicated another profession (e.g. researcher or policy maker). For the experiment, the participants were randomized to two conditions 145 participants were allocated to Condition 1 (100; mean age 48.83 (SD 9.95)) and 110 participants to Condition 2 (67 women, mean age 48.65 (SD 9.71)). The participants in the two conditions did not differ with regard to sex, age or range of profession.

### Materials

#### Treatment descriptions

In the first part of the study, we explored the various therapist variables for all four treatments: the two trauma-focused interventions (1a) imaginal exposure (IE) and (1b) Eye Movement Reprocessing and Desensitization (EMDR), and the two non-trauma-focused therapies (2a) psychopharmacological treatment (medication) and (2b) (present-centred) supportive counselling. To ensure that all participants had the same conceptualizations of the treatments, for each treatment a description was read out to the participants (see Appendix A), with the treatment descriptions corresponding in terms of length and sentence structures. So as not to influence the participants, the accounts did not contain any information about the known (side) effects of the various treatments. Second, all participants were shown clinical examples in the form of four 1-min videotaped therapist–patient interactions featuring the same female actors for each treatment.

**Case presentations.** For a description of the patient cases used in the experimental part of our study we refer to Appendix B.

**Cases 1 and 2: Comorbidity.** Participants were shown brief video recordings specifically produced for this study featuring two female PTSD patients (played by different actresses who were not involved in any other aspect of the study): one having experienced a single trauma (road traffic accident) in adulthood and one having suffered sexual abuse in childhood. The recordings were similar in nature and conveyed relevant information about the trauma and PTSD symptoms according to DSM-IV criteria (APA, 2000). Depending on the study condition, the two patients also showed comorbid depressive symptoms in a supplemented scene in accordance with the DSM-IV criteria for a Major Depressive Episode (APA, 2000).

**Cases 3 and 4: Patient preference.** Two similarly structured video recordings showed a female PTSD patient having suffered a single trauma (robbery) in adulthood and a patient having been subjected to childhood physical and psychological abuse. Apart from conveying information about the respective traumas and PTSD symptoms (DSM-IV; APA, 2000), again depending on the study condition, the tapes also showed scenes with the patient expressing a preference for trauma-focused therapy (IE or EMDR) or a preference for non-trauma-focused therapy (medication or supportive counselling).

#### Study conditions

In Condition 1, participants were shown Case 1 without comorbid depression and Case 2 with comorbid depression, while the participants in Condition 2 were presented with Case 1 showing comorbid depression and Case 2 without comorbid depression. Likewise, in Condition 1, participants saw Case 3 with a trauma-focused therapy preference and Case 4 with a non-trauma-focused therapy preference, and the participants in Condition 2 Case 3 with a non-trauma-focused therapy preference and Case 4 with a trauma-focused therapy preference (see Scheme 1 for a schematic overview).

#### Measures

##### Demographics

All participants were asked to state their age, sex and main profession.

##### Treatment use

For each of the four treatment options the participants indicated to what extent they offered the treatment in question ('I use this treatment to treat PTSD') on a 10-point scale (1 = Never, 10 = Always).

	Trauma	Manipulation	Condition 1	Condition 2
Case 1	Single trauma in adulthood	Comorbidity:	No depression	Depression
Case 2	Multiple trauma during childhood	Comorbidity:	Depression	No depression
Case 3	Single trauma in adulthood	Preference:	Trauma-focused	Non-trauma-focused
Case 4	Multiple trauma during childhood	Preference:	Non-trauma-focused	Trauma-focused

**Scheme 1.** Schematic Overview of Study Conditions.

### Training

They similarly rated the quality of their training ('I received a good training in this treatment for PTSD'; 1 = Does not apply to me at all; 10 = Fully applies to me).

### Treatment credibility

Participants responded to five statements about credibility of each of the four treatment options as based on the Credibility Scale (CS; Addis & Carpenter, 1999): (1) This treatment seems logical to me. (2) This treatment seems scientific to me. (3) If I have a PTSD, I would choose this treatment. (4) This treatment would be effective for most people. (5) If a close friend or relative has PTSD, I would recommend this therapy to them.

### Perceived barriers

Participants rated five statements about potential barriers to the clinical use of the treatments in question, based on the difficulties preventing the implementation of exposure treatment for PTSD as they are mentioned in the literature: (1) This treatment has unpleasant (temporary) side effects. (2) As a result of this treatment, PTSD symptoms can exacerbate. (3) Patients want this treatment. (4) This treatment is only useful for relatively healthy and stable patients, like patients with a single trauma, or patients without comorbid disorders. (5) This treatment causes dropout.

### Treatment suitability

After having viewed each patient case, the participants answered the question "How suitable do you think ('name of treatment') is for the treatment of this patient?" for each of the four treatments on a 10-point scale (1 = Not suitable at all, 10 = Exceptionally suitable).

### Forced choice

Finally, the participants were required to select one of the four treatments for the treatment of each particular patient: "If you were forced to make a choice between one of the four treatment options, which would you choose for this patient?"

### Procedure

The study formed an integral part of the 2008 NtVP annual conference programme. To ensure equal numbers of participants with comparable professional backgrounds, candidates were stratified based on profession, after which the conference organizer randomly assigned them to one of two conditions (and hence to two different conference rooms). In a brief introduction the participants were told the study aimed to investigate health professionals' attitudes towards and utilization of various treatments for PTSD.

The video recordings and questions were all projected on a screen and, using a wireless voting system, each participant individually answered the questions by pushing the appropriate button(s) of a 10-button keypad. After the participants had answered the demographic questions, the explorative survey was initiated, with the participants viewing the tapes illustrating the four treatments, after each tape indicating the use of and training in that particular treatment, its perceived credibility and barriers (factors prohibiting its use). Next, during the experimental part of the session, the participants viewed the video recordings of the four PTSD patient cases, answering the treatment suitability items and forced choice question after each case.

At the end of the session, the participants were asked to give permission for their data to be used for research and were shortly debriefed. The week after the experiment all participants were informed in more detail about the goals of the study.

### Analyses

Preliminary assumption testing was performed to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrixes, and multicollinearity; no serious violations emerged.

To evaluate the explorative survey data we performed repeated measures analyses and bivariate correlation analyses. For the experimental data we used one-way multivariate analyses of variance (MANOVA) for each of the four patient cases to identify condition effects on the professionals' treatment suitability/preference ratings, with the scores for IE, EMDR, medication, and supportive counselling as the four dependent variables and condition (resp. comorbid depression versus no comorbid depression, and patient preference trauma-focused versus patient-preference non-trauma-focused) as the independent variables. Because training, sex, credibility and perceived barriers of IE were hypothesized to be related to therapist's treatment suitability/preference scores, we included these variables as covariates in the MANOVAs. To avoid Type-I errors, we set alpha at .01 for all analyses.

## Results

### Explorative survey results

Table 1 shows the means and standard deviations (SDs) for the experts' responses to the four expert variables under study per treatment type.

### Use

The use differed significantly among treatments ( $F(3, 252) = 36.44, p < .000$ ), with contrast analyses showing IE to be significantly less frequently used than the other psychological treatments (all  $F > 4$ , all  $p < .001$ ).

### Training

Participants also differed in the (level of) training they had received for the four treatments ( $F(3, 252) = 51.91, p < .000$ ), with the contrast analyses revealing that they were less (well) trained in IE than in EMDR and supportive counselling, but better trained in IE than in medication (all  $F > 4$ , all  $p < .01$ ). The use of a treatment correlated highly with the level of training in that treatment (IE;  $r = .64$ ; EMDR;  $r = .78$ , Medication:  $r = .44$ , and supportive counselling  $r = .57$ , all  $p < .000$ ).

### Treatment credibility

The therapists' confidence in the treatments differed significantly: ( $F(3, 251) = 95.73, p < .000$ ), with IE being rated as more credible than medication and supportive counselling, but as less credible than EMDR (all  $F > 4$ , all  $p < .01$ ). As expected, training in and the use of a specific treatment were significantly positively

**Table 1**

Means and standard deviations (SDs) for the use of, training in, credibility of and perceived barriers to the treatment as reported by all consenting trauma experts ( $n = 255$ ).

Treatment	Use M (SD)	Training M (SD)	Credibility M (SD)	Perceived barriers M (SD)
Imaginal exposure	4.01 (3.11)	3.76 (3.03)	28.75 (10.60)	25.80 (5.71)
EMDR	5.05 (4.02)	4.45 (3.96)	37.86 (9.76)	22.11 (5.96)
Medication	4.53 (3.09)	2.58 (2.70)	22.62 (9.74)	24.87 (5.41)
Supportive counselling	6.37 (3.12)	5.54 (3.08)	26.24 (11.29)	18.94 (6.24)

Note: range for use and training: 1–10; treatment credibility range: 5–50, with higher scores reflecting higher treatment credibility; perceived barriers to treatment range 5–50, with higher scores indicating more perceived barriers.



related to its perceived credibility (Training; range  $r = .38$ – $r = .55$ , all  $p < .000$ ; Use; range  $r = .46$ – $r = .57$ , all  $p < .000$ ; specifically for IE; Training  $r = .38$ ; Use  $r = .57$ ).

#### Perceived barriers

The barriers the respondents recorded to the use of the treatments also differed significantly ( $F(3,252) = 84.59, p < .000$ ), with the most prohibitive factors being reported for IE (all  $F > 4$ , all  $p < .001$ ). In contrast to our hypothesis, use and training were relatively unrelated to the perceived barriers to a treatment (Training: range  $r = .03$ – $r = -.11$ , all  $p > .08$ ; Use: range  $r = -.06$ – $r = -.14$ , all  $p > .02$ ; specifically for IE: Training;  $r = -.05$ ; Use;  $r = -.08$ ).

#### Sex

The male respondents reported offering IE more often than their female counterparts ( $t(249, 1) = -2.66, p < .01$ ), while the other three treatments showed no sex-related differences. In line, the men found IE to be more credible than the women ( $t(172, 2) = -.57, p < .000$ ), which difference was not observed for the other treatments. No sex-dependent differences were found for perceived barriers.

#### Experimental results

For a schematic overview of the experiment, see also [Scheme 1](#).

#### Case 1. (Single trauma in adulthood with and without depression.)

[Table 2](#) lists the means and SDs for the treatment suitability data for [Case 1](#). Comorbid depression had not generated a significant effect on the suitability ratings ( $F(4, 241) = 1.62, p = .17$ , Wilks'  $\lambda = .97$ , partial  $\eta^2 = .03$ ). Training in IE did yield a main effect ( $F(4, 241) = 7.82, p < .001$ , Wilks'  $\lambda = .89$ , partial  $\eta^2 = .12$ ). Between-subjects effects were found for EMDR ( $F(1, 244) = 13.07, p < .001$ , partial  $\eta^2 = .05$ ), and supportive counselling ( $F(1, 244) = 25.40, p < .001$ , partial  $\eta^2 = .09$ ). In the total group, Training in IE was positively related to the use of EMDR ( $r = .14, N = 255$ ) and negatively to supportive counselling ( $r = -.33, N = 255$ ).

IE credibility also showed a main effect ( $F(4, 241) = 23.79, p < .001$ , Wilks'  $\lambda = .72$ , partial  $\eta^2 = .28$ ). Between-subjects effects were found for IE ( $F(1, 244) = 77.42, p < .001$ , partial  $\eta^2 = .24$ ), EMDR ( $F(1, 244) = 11.66, p = .001$ , partial  $\eta^2 = .05$ ) and medication ( $F(1, 244) = 8.71, p = .003$ , partial  $\eta^2 = .03$ ). IE credibility was positively related to perceived IE suitability ( $r = .57, N = 255$ ) and medication ( $r = .15, N = 255$ ), and negatively associated with perceived EMDR suitability ( $r = -.17, N = 255$ ).

The forced choice (see [Table 3](#)) data revealed a significant difference between conditions ( $\chi^2(3, 252) = 18.21, p < .001$ ). In the depression condition medication was more often chosen, than IE, EMDR and supportive counselling relative to the no-depression condition. Post-hoc pairwise analyses revealed a significant difference between conditions regarding medication on the one hand

and IE ( $\chi^2(1, 58) = 14.74, p = .000$ ), EMDR ( $\chi^2(1, 188) = 16.72, p = .000$ ) and supportive therapy ( $\chi^2(1, 47) = 11.84, p = .001$ ) on the other.

**Case 2. (Multiple trauma in childhood with and without depression.)** [Table 2](#) lists the means and SDs of the therapists' suitability ratings. For the Multiple Childhood Trauma case there was a statistically significant main effect of depression on the treatment's perceived suitability ( $F(4, 242) = 8.66, p < .001$ , Wilks'  $\lambda = .88$ , partial  $\eta^2 = .13$ ). In case of comorbid depression, the professionals rated IE ( $F(1, 245) = 11.35, p < .001$ , partial  $\eta^2 = .04$ ) and EMDR ( $F(1, 245) = 9.12, p < .01$ , partial  $\eta^2 = .04$ ) as less suitable and medication ( $F(1, 245) = 22.20, p < .001$ , partial  $\eta^2 = .08$ ) as more suitable.

Training in IE also showed a main effect ( $F(4, 242) = 4.58, p < .001$ , Wilks'  $\lambda = .93$ , partial  $\eta^2 = .07$ ) with EMDR yielding a between-subjects effect ( $F(1, 245) = 11.18, p = .001$ , partial  $\eta^2 = .04$ ). Training in IE was positively related to EMDR perceived suitability ( $r = .12, N = 255$ ).

Also, a main effect was found for IE credibility ( $F(4, 242) = 27.28, p < .001$ , Wilks'  $\lambda = .69$ , partial  $\eta^2 = .31$ ) with between-subject effects emerging for IE ( $F(1, 245) = 83.51, p < .001$ , partial  $\eta^2 = .25$ ) and EMDR ( $F(1, 245) = 18.44, p < .001$ , partial  $\eta^2 = .07$ ). IE credibility was positively related to IE suitability ( $r = .56, N = 255$ ) and negatively to EMDR suitability ( $r = -.20, N = 255$ ).

Perceived barriers to IE also produced a main effect ( $F(4, 242) = 4.89, p = .001$ , Wilks'  $\lambda = .93$ , partial  $\eta^2 = .08$ ), with IE yielding a between-subjects effect ( $F(1, 245) = 16.23, p < .001$ , partial  $\eta^2 = .06$ ). The more perceived barriers were mentioned, the less likely participants rated IE as a suitable option ( $r = -.26, N = 255$ ).

Forced choice (see [Table 3](#)) again uncovered significant differences between conditions ( $\chi^2(3, 252) = 13.13, p = .0004$ ), with post-hoc analyses revealing the difference between medication and EMDR to be significant: in the depression condition, medication was significantly more preferred than EMDR ( $\chi^2(N = 138) = 10.76, p = .001$ ) relative to the no-depression condition.

**Case 3. (Single trauma in adulthood with patient preference.)** [Table 4](#) shows the means and SDs for the therapist treatment suitability ratings for [Case 3](#). The patient's preference for a particular treatment had a statistically significant main effect on the therapists' judgments ( $F(4, 242) = 8.18, p < .001$ , Wilks'  $\lambda = .88$ , partial  $\eta^2 = .12$ ). Between-subject effects were found for IE ( $F(1, 245) = 26.34, p < .001$ , partial  $\eta^2 = .10$ ): when the patient expressed a preference for a trauma-focused treatment, either IE or EMDR, the therapists judged IE as more suitable.

Training in IE also showed a main effect ( $F(4, 242) = 7.78, p < .001$ , Wilks'  $\lambda = .89$ , partial  $\eta^2 = .11$ ), with a between-subjects effect for EMDR ( $F(1, 245) = 12.35, p = .001$ , partial  $\eta^2 = .05$ ) and supportive counselling ( $F(1, 245) = 27.41, p = .001$ , partial  $\eta^2 = .10$ ). Training in IE was positively related to EMDR suitability ( $r = .12$ ,

**Table 2**

Perceived treatment suitability for single adult trauma and multiple childhood trauma with and without comorbid depression.

	Single adult trauma				Multiple childhood trauma			
	No depression (n = 145)		Depression (n = 110)		No depression (n = 110)		Depression (n = 145)	
	M	SD	M	SD	M	SD	M	SD
Imaginal exposure	5.59	2.70	5.87	2.35	6.15	2.40	4.81	2.85
EMDR	8.13	2.26	8.00	2.23	7.66	2.16	6.87	2.56
Medication	2.63	1.81	4.80	2.72	3.63	2.28	5.11	2.42
Supportive therapy	5.00	2.92	4.64	2.58	5.59	2.51	6.41	2.43

Note: range scores 1–10, with higher scores indicating superior perceived treatment suitability.

**Table 3**  
Forced choice: percentage of professionals opting for a treatment as the most preferred treatment (comorbidity).

	Single adult trauma		Multiple childhood trauma	
	No depression (n = 145)	Depression (n = 110)	No depression (n = 110)	Depression (n = 145)
Imaginal exposure	17.2	12.7	17.3	23.4
EMDR	69.7	61.8	57.3	39.3
Medication	1.4	15.5	1.8	11.0
Supportive counselling	11.7	10.0	23.6	26.2

$N = 255$ ) and negatively to supportive counselling ( $r = -.14$ ,  $N = 255$ ).

Also, a main effect was found for IE Credibility ( $F(4, 242) = 28.97$ ,  $p < .001$ , Wilks'  $\lambda = .61$ , partial  $\eta^2 = .39$ ), with between-subjects effect for IE ( $F(1, 245) = 143.16$ ,  $p < .001$ , partial  $\eta^2 = .37$ ) and EMDR ( $F(1, 245) = 11.10$ ,  $p < .001$ , partial  $\eta^2 = .04$ ). IE Credibility was positively related to IE ( $r = .62$ ,  $N = 255$ ) and negatively to EMDR suitability ( $r = -.14$ ,  $N = 255$ ).

Again, the forced choice (see Table 5) yielded significant differences between conditions ( $\chi^2(3, 252) = 16.81$ ,  $p = .001$ ), with the post-hoc analyses showing the difference between IE and supportive counselling to be significant: when the patient expressed a preference for trauma-focused therapy, therapists more often opted for IE than for supportive counselling ( $\chi^2(1, 77) = 13.99$ ,  $p < .000$ ).

**Case 4. (Multiple trauma in childhood with patient preference.)** For means and SDs of preferences for Case 4, see Table 4. The patient's preference had a statistically significant effect on the therapists' treatment suitability ratings ( $F(4, 242) = 17.17$ ,  $p < .001$ , Wilks'  $\lambda = .78$ , partial  $\eta^2 = .22$ ), with between-subject effects for IE ( $F(1, 245) = 44.07$ ,  $p < .001$ , partial  $\eta^2 = .15$ ), EMDR ( $F(1, 245) = 25.35$ ,  $p < .001$ , partial  $\eta^2 = .09$ ) and supportive counselling ( $F(1, 245) = 19.74$ ,  $p < .001$ , partial  $\eta^2 = .08$ ). When the patient expressed a preference for a trauma-focused treatment, the therapists judged both IE and EMDR as more suitable than supportive counselling.

A main effect was found for IE Credibility ( $F(4, 242) = 32.16$ ,  $p < .001$ , Wilks'  $\lambda = .65$ , partial  $\eta^2 = .35$ ), with between-subject effects for IE ( $F(1, 245) = 91.18$ ,  $p < .001$ , partial  $\eta^2 = .27$ ) and EMDR ( $F(1, 245) = 19.25$ ,  $p < .001$ , partial  $\eta^2 = .07$ ). IE Credibility was positively related to IE ( $r = .55$ ,  $N = 255$ ) and negatively to EMDR suitability ( $r = -.20$ ,  $N = 255$ ).

Perceived barriers to IE also produced a main effect ( $F(4, 242) = 6.84$ ,  $p < .001$ , Wilks'  $\lambda = .90$ , partial  $\eta^2 = .10$ ), with between-subject effects for IE ( $F(1, 245) = 11.24$ ,  $p < .001$ , partial  $\eta^2 = .04$ ), medication ( $F(1, 245) = 10.54$ ,  $p < .001$ , partial  $\eta^2 = .04$ ) and supportive counselling ( $F(1, 245) = 12.45$ ,  $p < .001$ , partial  $\eta^2 = .05$ ). Perceived barriers to IE was negatively related to IE suitability ( $r = -.23$ ,  $N = 255$ ) and positively to the suitability ratings of EMDR ( $r = .21$ ,  $N = 255$ ) and supportive counselling ( $r = .25$ ,  $N = 255$ ).

**Table 4**  
Perceived treatment suitability for single adult trauma and multiple childhood trauma with a known patient preference for a trauma-focused versus a non-trauma-focused intervention.

	Single adult trauma				Multiple childhood trauma			
	Preference for trauma-focused therapy (n = 145)		Preference for non-trauma-focused therapy (n = 110)		Preference for trauma-focused therapy (n = 110)		Preference for non-trauma-focused therapy (n = 145)	
	M	SD	M	SD	M	SD	M	SD
Imaginal exposure	6.57	2.72	5.56	2.65	6.32	2.19	4.20	2.80
EMDR	8.38	1.91	8.17	1.95	7.93	2.03	6.46	2.83
Medication	2.45	1.68	3.06	2.08	3.13	2.06	3.78	2.24
Supportive therapy	4.36	2.70	4.72	2.64	5.00	2.67	6.52	2.42

Note: range scores 1–10, with higher scores indicating superior perceived treatment suitability.

And again the forced choice item (see Table 5) revealed significant differences between conditions ( $\chi^2(3, 252) = 21.96$ ,  $p < .001$ ), with post-hoc analyses showing the differences between IE and EMDR versus supportive counselling to be significant: when the patient expressed a preference for trauma-focused therapy, the therapists opted more frequently for IE ( $\chi^2(1, 123) = 13.69$ ,  $p < .000$ ) or EMDR ( $\chi^2(1, 123) = 19.28$ ,  $p < .001$ ) than for supportive counselling.

## Discussion

In an attempt to find an explanation for the minimal use of imaginal exposure, an evidence based technique, in the treatment of posttraumatic stress disorder, we conducted an explorative survey among 255 trauma experts practising in Belgium and the Netherlands looking at level of training, treatment credibility, perceived barriers and the therapist's sex. Further, we experimentally studied the effect of patients' comorbidity and treatment preferences by randomizing the trauma experts to two conditions in which they were presented four video recordings of PTSD patients (two single adult trauma and two multiple childhood trauma) either with or without comorbid depression and with a preference for trauma-focused or non-trauma-focused treatment.

We confirmed earlier findings (see Becker et al., 2004) in that only a minority of the therapists we polled actually used IE to treat their PTSD patients. Compared to EMDR and supportive counselling, two other commonly used psychological treatments for PTSD, IE was the least-used approach.

Looking for therapist and patient factors to explain this underutilization, we first found that, relative to the two alternative psychological interventions, the participating therapists had received the least training in IE. Given that the training in and use of the treatment were highly related for all four approaches, we argued that intensifying training in IE might maximize its use (see also Sprang et al., 2008). However, in the experimental part of our study we found no beneficial effects of superior training in IE on the judgments of and preference for IE. What we did find was that superior training in IE was associated with a higher preference for EMDR and a lower preference for supportive counselling. In line with the conclusions in the Sprang et al. study (2008), we suggest that (improved) training in IE does not

**Table 5**

Forced choice: percentage of professionals choosing a treatment as the most preferred treatment option (patient preference).

	Single adult trauma		Multiple childhood trauma	
	Trauma-focused therapy (n = 145)	Non-trauma-focused therapy (n = 110)	Trauma-focused therapy (n = 110)	Non-trauma-focused therapy (n = 145)
Imaginal exposure	27.6	12.7	24.5	16.6
EMDR	66.9	68.2	60.0	40.7
Medication	.7	3.6	1.8	3.4
Supportive therapy	4.8	15.5	13.6	39.3

Note: range scores 1–10, with higher scores reflecting superior perceived treatment suitability.

necessarily increase the use of this particular treatment but that it does foster the choice for trauma-focused approaches over non-trauma-focused interventions.

Despite its underuse in our expert cohort, and in contrast to our expectations, the respondents found IE to be more credible as a PTSD treatment than pharmacotherapy or supportive counselling, and, confirming our hypothesis, the more training the participants had enjoyed, the more often they offered IE in their practice and the more highly they rated its credibility. Interestingly, and independent of the presence of a comorbid depression or the patient's preference for a particular treatment, higher IE credibility was consistently related to a greater preference for and use of IE. This is in line with treatment outcome, a component of treatment credibility, being related to therapists' treatment preferences (Devilley & Huther, 2007). High IE credibility, however, did lead to a lower preference for EMDR, suggesting that, unlike training, credibility is a treatment-specific factor. To increase therapist confidence in IE, and thereby possibly promoting its use, during training it is important to emphasize the components that make up the treatment's credibility, for instance by highlighting its rationale and the empirical effects obtained in various PTSD populations. Yet, since a therapist's individual stance towards a treatment is another important aspect of treatment credibility, it may also be relevant to pay close attention to this aspect, for instance by having the therapists experience IE techniques for their own fearful or distressful autobiographic memories during the training sessions. It is our experience that this is a very powerful way to increase the credibility of exposure techniques to starting and practising therapists.

Interestingly, the male therapists reported to use IE significantly more often than their female colleagues. This does underscore Devilly and Huther's (2007) observation that women tend to view exposure therapy as more stressful than men. The men in our cohorts accordingly found IE to be more credible than the women. Because treatment credibility strongly influenced treatment suitability, the correlation between sex and treatment credibility may explain why the factor sex was not significant in the therapists' choice of treatment in our experiment.

Despite the therapists' relatively high confidence in IE, they did report the most barriers for its clinical use relative to the other psychological interventions, which is in accordance with previous research stating that IE, more than other trauma approaches, is associated with disadvantages or contraindications (see Becker et al., 2004; Cook et al., 2004). When our 'victims' had experienced a single trauma in adulthood, the perceived barriers did not play a role in the respondents' choice of IE. However, consistent with previous studies (Becker et al., 2004; Cook et al., 2004; Ruscio & Holohan, 2006), fear of symptom exacerbation or higher risk of dropout did negatively affect their IE preference in the two multiple childhood trauma cases.

Contrary to previous findings of clinicians reporting fewer barriers to the use of exposure when more experienced in the technique (Becker et al., 2004), and contrary to our hypothesis, we found that the use of and training in IE were relatively unrelated to

the obstacles the professionals foresaw. Hence, in spite of the evidence against such barriers to IE (see e.g., Cahill et al., 2006), our experts tended to persist in their subjective contraindications in the more complex PTSD patients, which misperceptions thus need to be explicitly addressed in IE training. Additionally or alternatively, to help overcome these perceived barriers, exposure programmes may be better tailored to the more challenging PTSD patients, similar to Cloitre, Stovall-McClough, Miranda, and Chemtob (2004) who offered the survivors of childhood sexual abuse a modified exposure programme after the patients had completed skills training in affect and interpersonal regulation.

Overall, in Case 1, the single-trauma-in-adulthood survivor, comorbid depression did not change the experts' preferences for a particular treatment, except when they were forced to make a choice, in which case more respondents opted for medication and fewer for psychological treatments, including IE, than when judging the same case without comorbidity. In Case 2, the victim of childhood sexual abuse, more respondents opted for medication and fewer for the two trauma-focused treatments (EMDR and IE) when the patient concurrently suffered from depression than when she did not, but here the IE preference rate did not change when they were forced to select the most suitable treatment. EMDR preference rates did decrease while the rate for medication increased. Note however, that overall psychological treatments were still preferred to medicinal treatment.

The patient's preference for a particular treatment was indeed highly relevant for the therapists' choice of treatment. When the patient expressed a preference for trauma-focused therapy, in all patient cases IE was significantly more offered than when the patient preferred non-trauma-focused treatment. This finding is also of high clinical relevance in that PTSD patients can play an important role in increasing the use of IE. Earlier studies already showed that patients tend to prefer psychological treatments to medication (Angelo et al., 2008; Cochran et al., 2008; Roy-Byrne et al., 2003), more specifically, they prefer CBT, including IE, regardless of the anticipated associated distress (Becker et al., 2007; Tarrier et al., 2006). To promote the use of IE in the clinical practice, it may thus be worthwhile to inform PTSD patients better about all treatment options, and to encourage clinicians to include the patient's preference more explicitly in the treatment decision-making process, especially in the light of another interesting result we obtained: in contrast to the Becker et al. (2007) and Tarrier et al. (2006) analogue studies where patients/respondents preferred exposure to EMDR, we found that, regardless of the case and the condition, when therapists were forced to make a choice, they preferred EMDR to all other approaches (albeit that this tendency was less pronounced in the 'patient' with multiple childhood trauma who had expressed a preference for non-trauma-focused therapy). Possibly, the trauma conference during which we conducted our study had attracted relatively more EMDR- than CBT-oriented therapists, which may have biased the results. It is, therefore, important that our findings are replicated in other therapist cohorts. Alternatively, our finding may also reflect



a discrepancy between the patients' preference (favouring exposure over EMDR) and the therapist's first choice (favouring EMDR over exposure), which thus constitutes another important topic for future research, where special attention should be paid to identifying the underlying reasons for this discrepancy and finding solutions to bring the patient's preference into line with the choice of the therapist who is to deliver the treatment.

Our study design did not allow us to directly compare the effects for the two different trauma types we presented to our expert audience. Nevertheless, we did consistently find treatment credibility to play an important role in the choice of treatment regardless of trauma type. In contrast, the perceived barriers to a particular treatment were relevant for the therapists' choice of treatment in the patients who suffered multiple childhood trauma only. Together, these findings suggest that when therapists are dealing with more complex PTSD patients, the decision-making process is likewise more complex, which reflects the current clinical practice, given that there is expert consensus about treatment guidelines for 'simple' PTSD, but not (yet) for more 'complex' PTSD (see e.g., Stein et al., 2009). Formulating guidelines for the treatment of the latter subgroup will require more randomized controlled studies evaluating more complex patients as well as consensus among trauma experts.

To our knowledge, ours is the first controlled study into the PTSD-specific treatment preferences of trauma professionals. By evaluating both therapist and patient variables in a controlled design, we were able to study how these factors interact in the treatment decision-making process. By having our study incorporated into a conference programme, we could gauge a large number of professionals and achieve a high response rate (86.2%). Also, we covered a broad range of trauma professionals by including experts from various related disciplines all directly involved in the treatment decision-making process concerning PTSD victims. For these reasons, we believe that the results of our study lend themselves well for generalization to the clinical practice. On the other hand, we do not know whether our cohort is representative of other professionals working with trauma victims who did not attend this specific conference, i.e., whether these health professionals were not or less specialized or interested in this area. Therefore, replication of our findings in other expert samples (e.g. members of a conference on CBT-related topics) is recommended.

Another point warranting discussion is the lack of a manipulation check. Especially in the two cases in which depression was added as a comorbid disorder, we have no guarantees that we introduced and represented the factor correctly and consistently and are thus unable to say if and to what extent the differences we obtained can be safely or fully attributed to the comorbid disorder. We would therefore suggest to explicitly check the respondents' interpretation of the patients' diagnosis in future investigations. Furthermore, the patient cases we presented all featured adult women, which limits the conclusions of our study to this particular population. It would be interesting to compare our results with those obtained in adult men and children diagnosed with similar and different traumas and comorbidity.

Summing up, we confirmed that, compared to other commonly used PTSD treatments, (imaginal) exposure remains an underutilized treatment and that trauma professionals are less well trained in exposure-based treatments. Patient variables were found to play an important role in the choice of treatment. In case of a comorbid depression, our expert cohort preferred psychopharmacotherapy to psychological, trauma-focused approaches, including exposure, and when patients expressed a preference for trauma-focused treatment, the experts were more likely to opt for exposure. Therapist characteristics were likewise found to be importantly related to the choice for exposure therapy, with the therapist's

confidence in the technique (IE treatment credibility) being the main determining factor. Perceived barriers to exposure (e.g. fear of symptom exacerbation and dropout) only correlated negatively to exposure preference when PTSD comprised multiple childhood traumas.

Given that also the trauma professionals we polled were undertrained in exposure, that training in exposure was found to be positively related to its use and credibility, we recommend encouraging starting professionals and those already working with PTSD victims to seek additional, comprehensive training in this proven technique (for training guidelines, also see Litz & Salters-Pedneault, 2008). The current results also imply that training should not be solely focused on the application of the technique, but also address the generally low credibility of and misperceived barriers to the treatment.

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### Appendix. Supplementary information

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.brat.2009.12.003.

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