Daring to process the trauma: using a web-based training to reduce psychotherapists' fears and reservations around implementing trauma-focused therapy

Lisa M. Sansen, Laura B. Saupe, Annika Steidl, Jörg M. Fegert, Ulrike Hoffmann & Frank Neuner

BASIC RESEARCH ARTICLE

Daring to process the trauma: using a web-based training to reduce psychotherapists' fears and reservations around implementing trauma-focused therapy

Lisa M. Sansen[a], Laura B. Saupe[a], Annika Steidl[a], Jörg M. Fegert[b], Ulrike Hoffmann[b] and Frank Neuner[a]

[a]Faculty of Psychology, Clinical Psychology and Psychotherapy, Bielefeld University, Bielefeld, Germany; [b]Department of Child and Adolescent Psychiatry/Psychotherapy, University Hospital Ulm, Ulm, Germany

ABSTRACT

Although trauma-focused interventions are the first-line therapies for patients with posttraumatic stress disorder (PTSD), they are not frequently used in clinical practice. Factors preventing therapists from applying trauma-focused methods include a lack of training and negative attitudes towards trauma-focused therapy. The aim of the present study was to investigate which factors predict willingness to carry out trauma-focused therapy and to examine whether a web-based training is able to reduce negative attitudes and reservations about these interventions. In a wait-list controlled evaluation study, therapists ($N = 499$) were randomized into an intervention or a wait-list control group. Results show that trauma-treatment specific competencies and overcoming pre-existing concerns towards trauma-focused therapy significantly predict therapists' willingness to utilize trauma-focused interventions. Thus, the content alignment of the web-based course is appropriate for improving therapists' willingness to conduct trauma-focused therapy. A retrospective examination of therapists after the training and a comparison of fears and reservations before and after the training demonstrate a significant reduction of fears and reservations. In terms of perceived contraindications, no effects of the web-based training were found. The present study provides compelling evidence that web-based training in evidence-based PTSD therapy is able to reduce reservations that may prevent therapists from applying evidence-based trauma-focused interventions.

Atreverse a procesar el trauma: el uso del entrenamiento basada en la web para reducir los temores y reservas de los psicoterapeutas acerca de la implementacion de la terapia centrada en el trauma

Aunque las intervenciones centradas en el trauma son las terapias de primera linea para pacientes con TEPT, no son usadas frecuentemente en la pracitca clinica. Los factores que hacen que los terapeutas eviten la aplicacion de metodos centrados en el trauma incluyen la falta de entrenamiento y las actitudes negativas hacia la terapia centrada en el trauma. El objetivo de este estudio fue investigar que factores predicen la disposicion para llevar a cabo la terapia centrada en el trauma y examinar si el entrenamiento basado en la web es capaz de reducir las actitudes negativas y reservas acerca de estas intervenciones. En un estudio de evaluacion controlado en la lista de espera, los terapeutas (N = 499) fueron aleatorizados en una intervencion o un grupo de control de lista de espera. Los resultados muestran que las competencias especificas del tratamiento del trauma y la superacion de las preocupaciones preexistentes hacia la terapia centrada en el trauma predicen significativamente la disposicion de los terapeutas para utilizar intervenciones centradas en el trauma. Por lo tanto, la alineacion del contenido del curso basado en la web es apropiada para mejorar la disposicion de los terapeutas a realizar una terapia centrada en el trauma. Una evaluacion retrospectiva de los terapeutas despues del entrenamiento y una comparacion de los temores y reservas antes y despues del entrenamiento demuestra una reduccion importante de los temores y reservas. En terminos de contraindicaciones percibidas, no se encontraron efectos del entrenamiento basado en la web. El presente estudio provee pruebas convincentes que el entrenamiento basado en la web en la terapia del TEPT basado en la evidencia es capaz de disminuir las reservas que pueden hacer que los terapeutas eviten aplicar intervenciones centradas en el trauma basadas en la evidencia.

敢于处理创伤：使用网络培训来减少心理治疗师对应用创伤聚焦疗法的恐惧和保留

尽管聚焦于创伤的干预措施是治疗PTSD患者的一线疗法，但在临床实践中并不经常被用到。阻碍治疗师使用创伤聚焦方法的因素包括缺少培训以及对创伤聚焦疗法所持的消极态度。本研究旨在探讨哪些因素可以预测进行创伤聚焦疗法的意愿度，并考查网络培训是否能够减少对这些干预措施的消极和保留态度。在候补对照评价研究中，499名治疗师被随机分为干预组或候补对照组。结果表明，创伤治疗的专业能力要求和克服先前对于创伤聚焦疗法的顾虑，显著预测了治疗师使用创伤聚焦疗法的意愿度。因此，网络课程

HIGHLIGHTS

Web-based training in trauma therapy
• increases therapists' knowledge and skills.
• leads to a modification of negative attitudes preventing therapists from applying trauma-focused interventions.
• improves the willingness to conduct trauma-focused therapy.

CONTACT Lisa M. Sansen ✉ lisa.sansen@uni-bielefeld.de University Bielefeld, P.O. Box 100131, Bielefeld 33501, Germany

的内容调整至适用于提高治疗师使用创伤聚焦疗法的意愿度。培训后对治疗师的回顾性考查以及培训前后恐惧和保留的对比均反映出恐惧和保留的显著减少。未发现网络培训在感知到的禁忌上的效应。本研究有力地证明了，针对循证PTSD治疗的网络培训能够减少可能阻碍治疗师采用循证创伤聚焦干预措施的保留。

1. Introduction

Trauma exposure is an effective treatment for patients with posttraumatic stress disorder (PTSD; Bisson et al., 2007; Ehring et al., 2014; Rauch, Eftekhari, & Ruzek, 2012). Although international PTSD psychotherapy guidelines (American Psychological Association, 2017; Cloitre et al., 2012; Flatten, Gast, Hofmann, & Knaevelsrud, 2011; The National Institute for Health and Care Excellence, 2018) also recommend trauma-focused interventions as the first-line intervention for treating PTSD, they are underrepresented in clinical practice (Becker, Zayfert, & Anderson, 2004; Kröger, Kliem, Sarmadi, & Kosfelder, 2010; Rosen et al., 2004). In particular, therapists' lack of confidence in conducting trauma-focused therapy, negative attitudes towards trauma-focused methods, and fears seem to be relevant factors preventing them from utilizing trauma-focused interventions (Cook, Dinnen, Simiola, Thompson, & Schnurr, 2014; Foy et al., 1996; van Minnen, Hendriks, & Olff, 2010).

Becker et al. (2004) found that the majority of licenced psychologists from rural and urban regions in the USA did not utilize trauma exposure during therapy. The main self-reported reasons for not implementing trauma-focused methods were insufficient training, a preference for individualized over manualized treatment, and concerns around harming the patient. The therapists' decision was also influenced by subjectively perceived contraindications (e.g. severe suicidality, psychotic disorders, any dissociation or comorbid disorders), complications such as deterioration of symptoms, an increase of suicidality or substance abuse, and a discontinuation of therapy. Gray, Elhai, and Schmidt (2007) also identified barriers for using evidence-based interventions such as difficulties regarding access to training (lack of time for training and learning, travel distance to training locations, high costs) and fear that research findings cannot be generalized to individual cases. In addition, worries about directly focusing on the traumatic event or fear of increased personal stress for the therapist are reasons cited by therapists for rarely conducting trauma-focused therapy (Neuner, 2008). Deacon et al. (2013) examined beliefs about exposure therapy in three samples of clinically practicing professionals. Results showed that negative beliefs concerning the lack of patient safety, appropriateness, and tolerance of trauma exposure all factored into the consideration of therapists for their treatment choices. Younger age and a cognitive-behavioural orientation seem to be connected to positive opinions about evidence-based practices.

The low rates of use of empirically supported trauma-focused treatments in Germany may also be attributed to the widespread assumption that the emotional stability of the patient is a necessary requirement before trauma exposure can take place. Kröger et al. (2010) interviewed a German sample of experienced licenced psychotherapists to examine which treatment methods for PTSD were actually applied in clinical practice. More than one-third of the participating therapists used imaginative stabilization techniques (such as training to visualize a safe place), whereas trauma exposure, in vivo exposure, and interventions from dialectic-behavioural therapy were rarely reported. Although common in practice, the use of stabilizing interventions seeking to distance the patient from memories of an experienced trauma has been questioned both for their necessity and effectiveness (Neuner, 2008).

These findings show that there are several barriers that decrease therapists' willingness to utilize trauma-focused methods to treat patients with PTSD. As a result of these barriers, a considerable discrepancy between the availability of evidence-based interventions for PTSD and their application in daily practice emerges, and optimal treatment is withheld from many patients suffering from PTSD (Pawils, Nick, Metzner, Lotzin, & Schäfer, 2017; Rosner, Henkel, Ginkel, & Mestel, 2010). Any efforts to improve the clinical care for these patients must directly adress therapists' reservations, fears, and concerns centred around trauma-focused methods. Moreover, it is necessary that willingness to conduct trauma-focused therapy is improved by providing them with information about effective interventions and their implementation, informing them about chances and risks of trauma-focused therapy, and offering a praxis-relevant training in evidence-based methods for treating PTSD.

Web-based technologies are a simple, accessible strategy for improving the dissemination of empirically-supported treatments on a large scale (Ruzek & Rosen, 2009). Several studies convey empirical support for the effectiveness of such web-based trainings (Dimeff et al., 2009; Harned, Dimeff, Woodcock, & Skutch, 2011; Sholomskas & Carroll, 2006; Sholomskas et al., 2005). Such research documents that web-based trainings are feasible, acceptable, and increase therapists' knowledge of the interventions being trained (Heck, Saunders, & Smith, 2015; Kanter, Tsai, Holman, & Koerner, 2013). However, the question of whether web-based trainings targeting trauma-focused therapeutic techniques are able to effectively communicate knowledge and competencies

that are relevant to the willingness to conduct such therapies has yet to be investigated. Further, it has yet to be determined whether such trainings are able to change negative attitudes, fears, and reservations towards trauma-focused methods. Therefore, one goal of the present study was to examine which factors predict therapists' willingness to implement trauma-focused treatment methods in their clinical practice. The second goal was to investigate whether a web-based training in evidence-based trauma therapy is an appropriate medium to decrease therapists' negative attitudes, fears, and reservations around utilizing trauma-focused therapy in their clinical practice. The last goal was to examine if the training can change perceived contraindications for implementing trauma-focused therapy.

2. Method

This study was part of a research consortium with the goal of developing and evaluating web-based trainings in the area of child protection. Sansen et al. (2019) provide an extensive description of the construction of the web-based training, the sample, and the measures utilized as part of the research consortium's work.

2.1. The web-based training

The web-based training consists of three modules providing information about traumatic events, PTSD, diagnostics, psychoeducation, and different evidence-based interventions for the treatment of PTSD. Its duration is an average of 52 hours. Moreover, it contains information about coping with difficulties in trauma therapy such as dissociation, self-harming behaviour and suicidality, and trauma therapy for children. Videos of best practice patient–therapist interactions were used to promote practical and emotional competence in treatment situations (for a detailed description see Sansen et al., 2019).

2.2. Subjects

Participants were future and licenced psychological and medical psychotherapists that were recruited in Germany through mailing lists for licenced therapists, medical doctors, and training institutes for psychotherapy as well as through advertising during clinical psychology conferences. After registration, participants were randomly assigned to an intervention group (IG) or a wait-list control group (WG) using computer-generated randomization sequences. The training started with $N = 247$ participants (82% women) in the IG and $N = 252$ (83% women) participants in the WG. In the IG the mean age was M (SD) = 43.16 (11.32). In the WG the mean age was M (SD) = 43.99 (11.82). A large portion of the sample consisted of licenced

psychotherapists who treated adults in their practice (IG: 35%, WG: 45%), licenced psychotherapists who practiced with children and adolescents (IG: 25%, WG: 18%), and psychotherapists in post-graduate education (IG: 26%, WG: 27%). Post questionnaires were completed by 183 therapists of the IG and by 151 therapists of the WG. A detailed description of the demographic data and a brief flow chart can be found in Sansen et al. (2019). The groups did not differ with regard to age, gender, profession or work experience.

2.3. Procedure

The medical ethics committee of Ulm University approved the study protocol. The study was conducted according to a wait-list control group design with an intervention group and a wait-list control group receiving the same web-based training five months after the start of the IG. After randomization, participants in both groups completed the pre-measurement (t1) online questionnaire, which was repeated after web-based training (t2) for the IG participants and at matched time-points for the WG participants. After the WG completed the training, the participants repeated this measurement. Six months after the post-intervention measurement of the IG both groups were asked to complete a follow-up questionnaire (t3).

2.4. Self-report measures

2.4.1. Demographic and job-related data
Demographic and job-related data were obtained via a self-created questionnaire. Information obtained included the participants' gender, age, profession, psychotherapeutic approach, patient group, and years of work experience.

2.4.2. Subjective state of knowledge and competencies
The subjective state of knowledge and competencies were assessed via self-rating questions that were previously developed for an online course on the prevention of child sexual abuse (Hoffmann et al., 2013; König et al., 2015). Four questions related to users' subjectively estimated knowledge about trauma in general, PTSD in general, diagnostics of PTSD, and treatment of PTSD (e.g. 'How do you evaluate your knowledge on diagnostics of post-traumatic stress disorder?'). Participants scored themselves on a 6-point scale ranging from 1 = 'very slight' to 6 = 'very extensive'. In addition, participants were asked to estimate their confidence in their ability to accurately conduct diagnostics for PTSD and treat trauma patients (1 = 'very uncertain' to 5 = 'very certain') with two questions (e.g. 'How certain do you feel in the treatment of trauma patients?') as well as their subjectively perceived competences for treating PTSD in general, for imaginal exposure, exposure

in vivo, cognitive restructuring, and dealing with difficult situations in trauma therapy (1 = 'very slight' to 6 = 'very extensive') with five questions (e.g. 'How do you assess your competences on the treatment of post-traumatic stress disorder by means of exposure in sensu?').

2.4.3. Subjective emotional competences and willingness to conduct trauma-focused therapy

Nine questions, specifically designed for the web-training, focused on users' self-perceived emotional competencies using a 6-point scale (1 = 'not at all true' to 6 = 'absolutely true'). The questions covered concerns regarding trauma-focused therapy (e.g. 'I am worried about harming my patients by using trauma-focused methods'), overcoming concerns and avoidance behaviour (e.g. 'I succeed in overcoming my avoidance impulses and avoidance tendencies during treatment of trauma patients'), and self-care ('I take care not to treat too many trauma patients at the same time'). In addition, users had to assess their own willingness to conduct trauma-focused therapy for treating PTSD on a 6-point scale ranging from 1 = 'very low' to 6 = 'very high'.

2.4.4. Self-efficacy expectations

We adopted the Generalized Self-Efficacy questionnaire from Schwarzer and Jerusalem (1999) to measure users' self-efficacy expectations in conducting trauma therapy by modifying the 10 original items, e.g. 'I can always manage to solve difficult problems in trauma therapy if I try hard enough' and 'I am confident that I could deal efficiently with unexpected events in trauma therapy'. Each item was rated on the original 4-point scale ranging from 1 = 'not at all true' to 4 = 'exactly true'. A sum score ranging from 10 to 40 was calculated by adding all individual item scores, with higher scores indicating higher self-efficacy expectations. Cronbach's alpha in this study was .91 which is comparable to results of previous studies using the original questionnaire (Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997).

2.4.5. Fears and reservations

Based on Becker et al. (2004), the authors of the present study developed 13 items assessing fears and reservations regarding the implementation of trauma-focused therapy. Two different methods were used to examine the impact of training on the change of fears and reservations, a retrospective assessment of the change and a pre–post comparison of the conviction of these fears and reservations. Therapists in the IG were asked to indicate how different fears regarding negative consequences of trauma exposure (e.g. increase of avoidance behaviour, increase of suicidal ideation, deterioration of therapeutic relationship, elevated probability of dropping out of treatment) have changed during the training on a 5-point scale ranging from 1 = 'fear markedly decreased' to 5 = 'fear markedly increased' at t2 and

t3. Therapists on the WG were asked for their conviction regarding the same fears on a 5-point scale ranging from 1 = 'not at all convinced' to 5 = 'strongly convinced' before and after the training. The Cronbach's alpha for this study was .95.

2.4.6. Assumed contraindications

The questionnaire for assessing assumed contraindications regarding trauma-focused therapy was also developed based on Becker et al. (2004) and consisted of 19 items. Therapists were asked to rate how likely it was that they would decide against carrying out a trauma-focused therapy under different circumstances (e.g. comorbid anxiety disorder, suicidal ideation, inclination to dissociation, self-harming behaviour). The 5-point scale ranged from 2 = 'very unlikely' to 6 = 'very likely'. By endorsing '1', therapists could indicate that they do not offer psychotherapy in general. Participants' answers were then added up to create the sum score, ranging from 38–114, with higher scores indicating a higher extent of perceived contraindications. The Cronbach's alpha for this study was .94.

2.5. Data analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences SPSS 23.0 and JMP version 13.2.0. For the purpose of data reduction, all 30 items regarding the subjective state of knowledge and competencies, subjective emotional competencies, and self-efficacy expectations were subjected to a principal component analysis (PCA; Sansen et al., 2019). The PCA resulted in six factors, including self-efficacy expectation, general knowledge (Cronbach's alpha: .92), specific competences (Cronbach's alpha: .75), self-care (Cronbach's alpha: .77), self-reflection (Cronbach's alpha: .71), and overcoming concerns (Cronbach's alpha: .55). Intercorrelations of all scales used in the following analyses are reported in Table 1.

In order to examine which factors are relevant for predicting willingness to conduct trauma-focused therapy, a multiple regression analysis was conducted in order to determine the contribution of demographic and job-related variables, knowledge, specific and emotional competencies, and self-efficacy expectations for the prediction of subjectively-assessed willingness to perform trauma-focused therapy. Changes regarding fears and reservations were examined descriptively by determining the percentage of therapists whose fears and reservations have decreased, increased, or stayed the same. All p-values were adjusted using the Holm-Bonferroni method. In addition, repeated measures analyses were used to calculate whether fears and reservations varied over time. Effect sizes for pre–post comparisons were calculated with $\eta^2 < .06$ classified as small effect, η^2 between .06 and .14 as medium effect, and

Table 1. Correlation matrix of all scales used in the analyses (t1).

	KT	K	CO	SC	SR	OC	SEE	W	FR
Knowledge test (KT)	1								
General knowledge (K)	.26**	1							
Competencies (CO)	.26**	.68**	1						
Self-care (SC)	.06	.18**	.16*	1					
Self-reflection (SR)	.14*	.24**	.08	.26**	1				
Overcoming concerns (OC)	.20**	.38**	.43**	.17**	.10	1			
Self-efficacy (SEE)	.16**	.54**	.54**	.25**	.13	.49**	1		
Willingness (W)	.22**	.30**	.46**	.14	.02	.54*	.38**	1	
Fears (FR)	−.17	−.11	−.09	−.02	.06	−.15	−.13	−.22*	1
Contraindications (C)	.13	.23**	.22**	.12	.03	.08	.14*	.10	−.06

*$p < .05$, **$p < .01$, ***$p < .001$ (all p-values adjusted using the Holm-Bonferroni method).

$\eta^2 > .14$ as large effect. To evaluate the effect of the web-based training on assumed contraindications, mixed-effects models were applied allowing an intent-to-treat analysis of the data using the groups (IG and WG) as a fixed factor, time-point as a within-participants repeated factor, and participants (nested in groups) as a random factor with random intercepts and slopes for each person. Post hoc analyses were carried out and effect sizes were calculated to estimate treatment effects by subtracting effect sizes (Hedge's g) of pre- and post-measurement as described by Klauer (2001). Following Cohen's (1988) conventions, $d \geq 0.2$ is classified as small effect, $d \geq 0.5$ as medium effect, and $d \geq 0.8$ as large effect. In order to indicate the proportion of participants who agreed to the specific contraindications, the answers 'likely' and 'very likely' were combined into one category.

3. Results

3.1. Regression analysis for the prediction of willingness to conduct trauma-focused therapy

In order to examine which factors play a relevant role in the prediction of self-reported willingness to perform trauma-focused therapy, a regression analysis was carried out. Preliminary analyses were conducted to ensure there were no violations of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Among sociodemographic predictors, age and gender were entered into the analysis. Among job-related factors, work experience, cognitive behavioural, and psychodynamic psychotherapeutic approach were considered. Regarding knowledge and competences, the following variables were accounted for: the PCA components general knowledge about trauma and PTSD, specific competences for treating PTSD, self-reflection, self-care, overcoming concerns, and avoidance and self-efficacy expectations, as well as objective state of knowledge determined by the knowledge test. The total variance explained by the model was 44.6%, $F(12, 486) = 32.66$, $p < .001$. Correlations and beta values of the predictors regarding willingness to conduct trauma-focused therapy are presented in Table 2.

Table 2. Multiple regression analysis for the prediction of willingness to conduct trauma-focused therapy.

Variable	r	Standardized β
Sociodemographic variables		
Gender	.06	.11**
Age	−.27***	−.25***
Work experience	.20***	.05
Cognitive behavioural approach	.35***	.13*
Psychodynamic approach	−.29***	−.02
Course outcome variables		
General knowledge	.30***	−.01
Specific competences	.46***	.22***
Self-reflection	.02	.00
Self-care	.14**	.03
Overcoming concerns	.54***	.36***
Self-efficacy expectations	.38***	.06
Knowledge test	.22***	−.02

*$p < .05$, **$p < .01$, ***$p < .001$ (adjusted using the Holm-Bonferroni method).

3.2. Fears and reservation

Tables 3 and 4 show perceived changes in participants' levels of fears and reservations towards trauma-focused interventions. Table 3 descriptively presents changes retrospectively estimated by the IG users. For ease of reading, all data with 1 ('fear markedly decreased') and 2 ('fear decreased') were summarized as 'decrease', all data with 4 ('fear increased') and 5 ('fear markedly increased') were summarized as 'increase', whereas 3 stands for a lack of change in fear. Calculated pre–post comparisons of WG estimations by means of repeated measures analyses are presented in Table 4.

Table 3. Percentages of retrospectively estimated changes in fears and reservations, intervention group ($N = 183$).

Item	Decrease % (1/2)[a]	No change (3)[a]	Increase (4/5)[a]
Fears about increase of			
Re-experiencing and arousal	82	18	2
Avoidance behaviour	70	21	0
Dissociation	87	14	0
Substance abuse or addiction	76	24	21
Self-harming behaviour	84	15	1
Suicidal ideation	81	18	1
Numbing	77	22	1
Overwhelming fear of the patient	84	15	1
Endangerment of others	65	34	21
Dropping out of treatment	79	22	0
Physical aggression	67	33	1
Deterioration of relationships			
In general	50	44	5
Therapeutic relationship	75	26	0

[a]1 = 'fear markedly decreased' to 5 = 'fear markedly increased'.

3.3. Assumed contraindications

In terms of assumed contraindications (see Table 5), there was neither a significant time x treatment interaction ($F(2, 721.1) = 1.40$, $p = .25$) nor a main effect of treatment ($F(1, 529.8) = 0.12$, $p = .73$). The main effect of time trended towards significance ($F(2, 721.1) = 2.83$, $p = .06$). The participants' judgements of how likely they would perform trauma-focused therapy under the different circumstances surveyed differed depending on the contraindication. After the training, participants of the intervention group selected psychotherapy discontinuation in the past (13%), comorbid mental disorders (15%), and lack of therapy success in the past (15%) most rarely as reasons preventing trauma-focused therapy. Psychotic disorders (37%), physical endangerment of the patient by the environment (37%), and acute suicidal tendencies requiring crisis intervention (38%) were most frequently cited as contraindications.

4. Discussion

The present study was able to show that a web-based training in evidence-based trauma therapy can be used to address competences and attitudes that play a meaningful role in the prediction of willingness to conduct trauma-focused PTSD therapy. Moreover, results show that it leads to a reduction of fears and reservations that are known to prevent therapists from applying trauma-focused methods.

We investigated the relationship of sociodemographic factors, knowledge, and competences with willingness to carry out trauma-focused therapy, as well as their predictive value in terms of willingness in a regression analysis. The evaluation of the web-based training showed that it addresses both knowledge as well as competencies relevant to trauma diagnostics and treatment, emotional competencies, and self-efficacy expectations, and actually leads to an increase in all these areas (Sansen et al., 2019). Most of the training's outcome variables (general knowledge, specific competences, self-care, overcoming concerns, self-efficacy expectations, knowledge test) were associated with willingness to carry out trauma-focused therapy.

Furthermore, specific competences in terms of trauma therapy, overcoming fears, and sociodemographic factors play a meaningful role in the prediction of willingness to apply trauma-focused interventions. The findings that being male and being younger are associated with less reservations towards trauma-focused therapy are in line with previous findings (Sprang, Craig, & Clark, 2008; van Minnen et al., 2010). Subjective and objective knowledge is significantly correlated with willingness to treat PTSD patients, but had no predictive value in the regression analysis. This finding indicates that knowledge is indeed a relevant aspect but may have no significant effect on willingness to treat if therapists do not know how to practically apply theoretical knowledge and how to overcome their reservations in terms of conducting trauma therapy.

Thus, the content alignment of our web-based course proved to be highly relevant for clinical practice. The main focus of the training, with its focus on practical competences and the modification of

Table 4. Pre–post comparison of the conviction regarding fears and reservations regarding trauma-focused therapy (1 = 'not at all convinced' to 5 = 'strongly convinced'), wait-list control group ($N = 151$).

Item	Pre M (SD)	Post M (SD)	Partial η^2	Analysis
Fears about increase of				
Re-experiencing and arousal	2.59 (1.16)	2.03 (1.11)	.14	**
Avoidance behaviour	1.60 (0.83)	1.28 (0.61)	.13	**
Dissociation	2.15 (0.96)	1.44 (0.67)	.30	**
Substance abuse or addiction	1.85 (0.84)	1.46 (0.67)	.15	**
Self-harming behaviour	2.03 (0.89)	1.52 (0.70)	.22	**
Suicidal ideation	2.03 (0.90)	1.40 (0.69)	.28	**
Numbing	1.87 (0.87)	1.36 (0.62)	.22	**
Overwhelming fear of the patient	2.21 (1.05)	1.48 (0.71)	.31	**
Endangerment of others	1.58 (0.74)	1.26 (0.58)	.12	**
Dropping out of treatment	2.08 (0.96)	1.33 (0.59)	.35	**
Physical aggression	1.75 (0.83)	1.33 (0.65)	.18	**
Deterioration of relationships				
In general	2.11 (0.89)	2.27 (0.89)	.02	$p = .072$
Therapeutic relationship	1.42 (0.71)	1.09 (0.31)	.18	**

**$p < .01$ (adjusted using the Holm-Bonferroni method).

Table 5. Mean scores of dependent variables separated by group.

Variable	Group	t1 M (SD)	t2 M (SD)	t3 M (SD)	d between group t1 to t2
Perceived contraindications	IG	65.60 (20.12)	63.76 (18.93)	64.35 (20.46)	0.12
	WG	64.75 (21.60)	65.30 (21.82)	61.18 (18.09)	

negative attitudes and fears towards trauma-focused therapy, was successful. However, the exercises and parts of the training concerned with aspects of self-reflection should be critically examined as they were not associated with or predictive of willingness to conduct trauma-focused therapy. In order to reduce the costs of implementing the training, streamlining the training by omitting these elements in future trainings and focusing on conveying specific evidence-based trauma content and competencies, as well as on modifying fears and reservations in using trauma-focused therapy, could be considered.

Another main goal of the present study was to investigate whether fears and reservations in terms of trauma-focused therapy can be modified by a web-based training. Results show that both a retrospective examination of therapists after the training and a comparison of fears and reservations prior to and after the training demonstrate a clear reduction of different fears and reservations, such as fear of harming patients, of aggravating symptoms, and of causing self-harming behaviour or suicidal ideation. Our results expand prior findings which indicate that internet-based training leads to enhanced knowledge and improved skills by showing that attitudes and fears can be modified by web-based training (Heck et al., 2015; Kanter et al., 2013; Kobak, Craske, Rose, & Wolitsky-Taylor, 2013; Kobak, Wolitzky-Taylor, Craske, & Rose, 2017). Referring to Becker et al. (2004), these fears represent crucial barriers which discourage therapists from treating patients with PTSD. Therefore, this finding provides compelling support for the conclusion that web-based trainings not only convey knowledge and competences, but can also modify attitudes, negative beliefs, and apprehensions around implementing trauma-focused therapy.

The investigation of effects on perceived contraindications to apply trauma-focused treatments revealed no significant interaction or main effect. This lack of interaction or main effect could be due to a statistical artefact, as the different contraindications were not considered separately but as a sum score. Some of the conditions assessed actually are contraindications for implementing trauma-focused therapy (e.g. acute suicidal tendencies requiring crisis intervention or acute psychosis), while others (e.g. comorbid mental disorders, self-harming behaviour) are no contraindications per se. Therefore it is not surprising that the estimation of some contraindications did not change after the course. Moreover, a general statement about each contraindication might have been difficult for the participants. In clinical practice they usually have much more case information to derive an individual case decision whether a certain condition is a contraindication or not. Nevertheless, about one-fifth of the participants still considered conditions such as anxiety disorders, a tendency to dissociate or self-harming behaviour to be contraindications preventing them from applying trauma-focused interventions. This result may also

demonstrate that the training did not sufficiently aim to teach participants to differentiate actual contraindications from personal reservations. It may therefore be advisable to increase the focus on subjectively perceived but not evidence-based contraindications in future web-based trainings in order to determine whether an increased emphasis on addressing these contraindications would reduce barriers to implementing trauma-focused therapy.

Particular strengths of the study include the large number of therapists participating in the study, the use of a wait-list control group design with a six-months follow-up survey, and the investigation of changes of fears and reservations through both a retrospective recall approach and a pre–post comparison. However, some limitations are necessary to mention. A selection bias can be assumed, since therapists who voluntarily participate in such an extensive training have a high motivation to change. It still needs to be evaluated whether the broad scope of the course content, that goes beyond the content of most face-to-face workshop, attracts a wide range of practitioners. A clear advantage of the broader approach is that it enables users to individually choose the areas and topics in which they need additional training without enrolling in different training courses or modalities. Besides the advantages of web-based training, however, there is also the risk that employees have to complete this form of training in their free time. It is therefore important that employers deem web-based and face-to-face trainings as equally important for employees work performance as traditional face-to-face trainings and include web-based courses in the daily workload to avoid an additional work strain in employees free time. As the follow-up in the intervention group took place only six months after completion of the training, no statements about long-term effects can be derived. Moreover, it remains to be shown whether clinicians' subjectively estimated willingness to carry out trauma-focused therapy is actually reflected in a higher number of conducted trauma-focused therapies. In addition, there are some methodological limitations that must be taken into account. On the one hand, there may be general biases due to the exclusive use of self-report measures and social desirability. On the other hand, the use of different methods in the intervention group and the wait-list control group (retrospective examination vs. pre–post comparison in terms of fears and reservations) does not always allow a direct comparison of the groups although a wait-list control group design was used. A distortion due to retrospective assessment of changes in fears and reservations cannot be ruled out, which could lead to an overestimation of the positive effect of the training and thus to a lack of comparability between the self-assessed change and the pre–post comparisons. However, the fact that the two different methods both point to a reduction in fears and reservations speaks in favour of a positive effect of training.

Further work should focus on examining whether web-based training is sufficient to change daily working practice. There are hints that the acquisition and implementation of new interventions skills could be limited without case supervision (Edmunds, Beidas, & Kendall, 2013; Miller, Yahne, Moyers, Martinez, & Pirritano, 2004; Rakovshik, McManus, Vazquez-Montes, Muse, & Ougrin, 2016; Sholomskas et al., 2005). Therefore, the investigation of a combination of web-based training and case supervision approach to support therapists in the crucial phase of implementing the learned skills into clinical practice could be a promising starting point for future research. It also remains to be shown if patient outcomes can also be affected by web-based trainings for therapists in addition to any subjective changes in therapists' competencies, fears, attitudes, and reservations (Sinclair, Kable, Levett-Jones, & Booth, 2016).

In sum, the results of the present study provide compelling evidence that web-based training in evidence-based therapy is a promising approach to increase willingness to conduct trauma-focused therapy and in reducing barriers that prevent therapists from applying evidence-based interventions. This study should encourage researchers and clinicians to develop and evaluate more web-based trainings in different languages for disseminating other evidence-based interventions, potentially reducing practitioners' reservations towards implementing them.

References

American Psychological Association. (2017). *Clinical practice guideline for the treatment of posttraumatic stress disorder (PTSD) in adults*. American Psychological Association Guideline Development Panel for the Treatment of PTSD in Adults. Retrieved from https://www.apa.org/about/offices/directorates/guidelines/ptsd.pdf

Becker, C. B., Zayfert, C., & Anderson, E. (2004). A survey of psychologists attitudes towards and utilization of exposure therapy for PTSD. *Behaviour Research and Therapy*, 42(3), 277–292.

Bisson, J. I., Ehlers, A., Matthews, R., Pilling, S., Richards, D., & Turner, S. (2007). Psychological treatments for chronic post-traumatic stress disorder. Systematic review and meta-analysis. *Trial*, 190, 97–104.

Cloitre, M., Courtois, C. A., Ford, J. D., Green, B. L., Alexander, P., Briere, J., … Van der Hart, O. (2012). The ISTSS expert consensus treatment guidelines for complex PTSD in adults. Retrieved from https://www.istss.org/ISTSS_Main/media/Documents/ISTSS-Expert-Concesnsus-Guidelines-for-Complex-PTSD-Updated-060315.pdf

Cohen, J. (1988). The effect size index: D. *Statistical Power Analysis for the Behavioral Sciences*, 2, 284–288.

Cook, J. M., Dinnen, S., Simiola, V., Thompson, R., & Schnurr, P. P. (2014). VA residential provider perceptions of dissuading factors to the use of two evidence-based PTSD treatments. *Professional Psychology, Research and Practice*, 45(2), 136–142.

Deacon, B. J., Farrell, N. R., Kemp, J. J., Dixon, L. J., Sy, J. T., Zhang, A. R., & Mcgrath, P. B. (2013). Assessing therapist reservations about exposure therapy for anxiety disorders: The therapist beliefs about exposure scale. *Journal of Anxiety Disorders*, 27, 772–780.

Dimeff, L. A., Koerner, K., Woodcock, E. A., Beadnell, B., Brown, M. Z., Skutch, J. M., … Harned, M. S. (2009). Which training method works best? A randomized controlled trial comparing three methods of training clinicians in dialectical behavior therapy skills. *Behaviour Research and Therapy*, 47(11), 921–930.

Edmunds, J. M., Beidas, R. S., & Kendall, P. C. (2013). Dissemination and implementation of evidence-based practices: Training and consultation as implementation strategies. *Clinical Psychology: Science and Practice*, 20(2), 152–165.

Ehring, T., Welboren, R., Morina, N., Wicherts, J. M., Freitag, J., & Emmelkamp, P. M. G. (2014). Meta-analysis of psychological treatments for posttraumatic stress disorder in adult survivors of childhood abuse. *Clinical Psychology Review*, 34(8), 645–657.

Flatten, G., Gast, U., Hofmann, A., & Knaevelsrud, C. (2011). S3–Leitlinie Posttraumatische Belastungsstörung. *Trauma Und Gewalt*, 5(3), 202–210.

Foy, D. W., Kagan, B., McDermott, C., Leskin, G., Sipprelle, R. C., & Paz, G. (1996). Practical parameters in the use of flooding for treating chronic PTSD. *Clinical Psychology and Psychotherapy*, 3(3), 169–175.

Gray, M. J., Elhai, J. D., & Schmidt, L. O. (2007). Trauma professionals attidues towards and utilization of evidence based practices. *Behavior Modification*, 31, 732–748.

Harned, M. S., Dimeff, L. A., Woodcock, E. A., & Skutch, J. M. (2011). Overcoming barriers to disseminating exposure therapies for anxiety disorders: A pilot randomized controlled trial of training methods. *Journal of Anxiety Disorders*, 25(2), 155–163.

Heck, N. C., Saunders, B. E., & Smith, D. W. (2015). Web-based training for an evidence-supported treatment: Training completion and knowledge acquisition in a global sample of learners. *Child Maltreatment*, 20(3), 183–192.

Hoffmann, U., König, E., Niehues, J., Seitz, A., Fegert, J. M., & Liebhardt, H. (2013). Onlinekurs „Prävention von sexuellem Kindesmissbrauch". Erste Erfahrungen und Forschungsergebnisse. *Nervenheilkunde*, 32(11), 856–865.

Kanter, J. W., Tsai, M., Holman, G., & Koerner, K. (2013). Preliminary data from a randomized pilot study of web-based functional analytic psychotherapy therapist training. *Psychotherapy*, 50(2), 248–255.

Klauer, K. J. (2001). *Handbuch kognitives training*. Göttingen: Hogrefe.

Kobak, K. A., Craske, M. G., Rose, R. D., & Wolitsky-Taylor, K. (2013). Web-based therapist training on cognitive behavior

therapy for anxiety disorders: A pilot study. *Psychotherapy*, *50* (2), 235–247.

Kobak, K. A., Wolitzky-Taylor, K., Craske, M. G., & Rose, R. D. (2017). Therapist training on cognitive behavior therapy for anxiety disorders using internet-based technologies. *Cognitive Therapy and Research*, *41*(2), 252–265.

König, E., Hoffmann, U., Liebhardt, H., Michi, E., Niehues, J., & Fegert, J. M. (2015). Ergebnisse der evaluation des Online-Kurses "Prävention von sexuellem Kindesmissbrauch". In J. M. Fegert, U. Hoffmann, E. König, J. Niehues, & H. Liebhardt (Eds.), *Sexueller Missbrauch von Kindern und Jugendlichen. Ein Handbuch zur Prävention und Intervention für Fachkräfte im medizinischen, psychotherapeutischen und pädagogischen Bereich*. Berlin und Heidelberg: Springer.

Kröger, C., Kliem, S., Sarmadi, N. B., & Kosfelder, J. (2010). Versorgungsrealität bei der Behandlung der posttraumatischen Belastungsstörung Eine Umfrage unter psycho-traumatologisch erfahrenen Psychologischen Psychotherapeuten. *Zeitschrift Für Klinische Psychologie Und Psychotherapie*, *39*(2), 116–127.

Miller, W. R., Yahne, C. E., Moyers, T. B., Martinez, J., & Pirritano, M. (2004). A randomized trial of methods to help clinicians learn motivational interviewing. *Journal of Consulting and Clinical Psychology*, *72*(6), 1050–1062.

National Institute for Health and Care Excellence. (2018). *Guideline 116. Post-traumatic Stress Disorder*. Retrieved from https://www.nice.org.uk/guidance/ng116

Neuner, F. (2008). Stabilisierung vor Konfrontation in der Traumatherapie - Grundregel oder Mythos? *Verhaltenstherapie*, *18*(2), 109–118.

Pawils, S., Nick, S., Metzner, F., Lotzin, A., & Schäfer, I. (2017). Healthcare situation for children, adolescent and adult victims of sexual violence in Germany : A critical overview. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz*, *60*(9), 1046–1054.

Rakovshik, S. G., McManus, F., Vazquez-Montes, M., Muse, K., & Ougrin, D. (2016). Is supervision necessary? Examining the effects of internet-based CBT training with and without supervision. *Journal of Consulting and Clinical Psychology*, *84*(3), 191–199.

Rauch, S. A. M., Eftekhari, A., & Ruzek, J. I. (2012). Review of exposure therapy: A gold standard for PTSD treatment. *The Journal of Rehabilitation Research and Development*, *49*(5), 679–688.

Rosen, C. S., Chow, H. C., Finney, J. F., Greenbaum, M. A., Moos, R. H., Sheikh, J. I., & Yesavage, J. A. (2004). VA practice patterns and practice guidelines for treating posttraumatic stress disorder. *Journal of Traumatic Stress*, *17*(3), 213–222.

Rosner, R., Henkel, C., Ginkel, K., & Mestel, R. (2010). Was passiert nach der stationären Stabilisierung mit komplex traumatisierten PTB-Patientinnen? *Zeitschrift Für Psychiatrie, Psychologie Und Psychotherapie*, *58*(2), 127–135.

Ruzek, J. I., & Rosen, R. C. (2009). Disseminating evidence-based treatments for PTSD in organizational settings: A high priority focus area. *Behaviour Research and Therapy*, *47*(11), 980–989.

Sansen, L. M., Saupe, L. B., Steidl, A., Fegert, J. M., Hoffmann, U., & Neuner, F. (2019). Development and randomized-controlled evaluation of a web-based training in evidence-based trauma therapy. *Professional Psychology: Research and Practice*. doi:10.1037/pro0000262

Schwarzer, R., Bäßler, J., Kwiatek, P., Schröder, K., & Zhang, J. X. (1997). The assessment of optimistic self-beliefs: Comparison of the German, Spanish, and Chinese versions of the general self-efficacy scale. *Applied Psychology*, *46*(1), 69–88.

Schwarzer, R., & Jerusalem, M. (1999). *Skalen zur Erfassung von Lehrer-und Schülermerkmalen. Dokumentation der psychometrischen Verfahren im Rahmen der Wissenschaftlichen Begleitung des Modellversuchs Selbstwirksame Schulen*. Berlin: Freie Universität. Retrieved from http://userpage.fu-berlin.de/%7Ehealth/self/skalendoku_selbstwirksame_schulen.pdf

Sholomskas, D. E., & Carroll, K. M. (2006). One small step for manuals: Computer-assisted training in twelve-step facilitation. *Journal of Studies on Alcohol*, *67*(6), 939–945.

Sholomskas, D. E., Syracuse-Siewert, G., Rounsaville, B. J., Ball, S. A., Nuro, K. F., & Carroll, K. M. (2005). We don't train in vain: A dissemination trial of three strategies of training clinicians in cognitive-behavioral therapy. *Journal of Consulting and Clinical Psychology*, *73*(1), 106–115.

Sinclair, P. M., Kable, A., Levett-Jones, T., & Booth, D. (2016). The effectiveness of internet-based e-learning on clinician behaviour and patient outcomes: A systematic review. *International Journal of Nursing Studies*, *57*, 70–81.

Sprang, G., Craig, C., & Clark, J. (2008). Factors impacting trauma treatment practice patterns: The convergence/divergence of science and practice. *Journal of Anxiety Disorders*, *22*(2), 162–174.

van Minnen, A., Hendriks, L., & Olff, M. (2010). When do trauma experts choose exposure therapy for PTSD patients? A controlled study of therapist and patient factors. *Behaviour Research and Therapy*, *48*(4), 312–320.