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Visser, Martje S.G.; Boonstra, Nynke; de Bont, Paul A.J.M.; van der Vleugel, Berber M.; van den Berg, David

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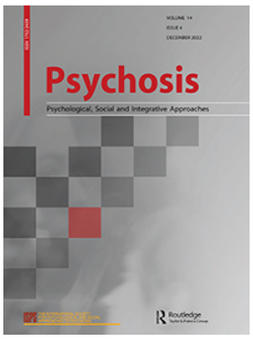
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The effects of a specialized staff training on trauma-sensitivity in professionals working with patients with a psychotic disorder: A pilot study

Martje S.G. Visser[a], Nynke Boonstra[a,b], Paul A. J. M. de Bont[c], Berber M. van der Vleugel[d] and David van den Berg[e,f]

[a]Forensic Psychiatric Department (FPA), Mental Health Organisation (MHO) GGZ Friesland, Leeuwarden, The Netherlands; [b]Department of Welfare and Healthcare, NHL Stenden University of Applied Science, Leeuwarden, The Netherlands; [c]Department of Early Intervention Psychosis, Mental Health Organisation (MHO) GGZ Oost Brabant, Land van Cuijck en Noord Limburg, Boxmeer, The Netherlands; [d]Early Detection and Intervention Team (EDIT), The Community Mental Health Service GGZ Noord-Holland Noord, Alkmaar, The Netherlands; [e]Psychosis Research Department, Parnassia Psychiatric Institute, Den Haag, The Netherlands; [f]Department of Clinical Psychology and Amsterdam Public Health Research Institute, Vrije Universiteit, Amsterdam, The Netherlands

ABSTRACT

Background: Studies show that the trauma-sensitivity of professionals working with patients with psychosis is insufficient. As a result, trauma-related problems remain undetected and untreated, which may impede recovery in this group. This study explored the effects of a specialised staff training on six trauma-sensitivity factors (i.e. knowledge, credibility, expected burden, harm expectancy, diagnostic competency and organizational support), self-reported trauma-sensitive behaviour and objective indicators of trauma-sensitive behaviour in medical files.

Method: Professionals (N = 56) rated the six trauma-sensitivity factors and their own trauma-sensitive behaviour at pre-training, post-training and at 6- and 12-months follow-up. Changes in indicators of trauma-sensitive behaviours were assessed by a review of medical files (N = 97).

Results: The specialized training increased knowledge, crediblity and experienced diagnostic compentence. The training decreased burden and harm expectancies, and enhanced self-reported trauma-sensitive behaviour. However, this positive change could not be objectified by indicators of trauma-sensitive behaviour in medical files.

Discussion: These findings support the notion that specialised training has a positive effect on increasing trauma-sensitivity and decreasing burden and harm expectancies, but not necessarily on observable trauma-sensitive behaviour. In addition to training staff, structural implementation and organisational support are argued to be essential to attain actual behaviour change.

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Trauma; training; psychosis; trauma-sensitivity; implementation

Introduction

Traumatic events can lead to persistent psychological difficulties. Exposure to trauma (Grubaugh et al., 2011; Mauritz et al., 2013) and especially to childhood trauma (Matheson et al., 2013; De Vries et al., 2019) is highly prevalent in people with psychosis and almost triples the odds of developing psychosis in adulthood (Varese et al., 2012). Several trauma-based explanatory models of psychosis have been

CONTACT Martje S.G. Visser marga.visser@ggzfriesland.nl Mental health Organisation (MHO) GGZ Friesland, Burgemeester J. Dijkstraweg 6, 8801 PG, Franeker, The Netherlands

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developed (e.g. Moskowitz & Schafer, 2019). Despite the high prevalence of traumatization in this population, trauma-sensitivity of professionals (being attentive to and assessing trauma, trauma-related problems and setting indications for trauma-informed or trauma-focused treatments) appears to be insufficient, resulting in underdetection of trauma symptoms (De Bont et al., 2015; Grubaugh et al., 2011; Lommen & Restifo, 2009; Mauritz et al.,). Not addressing trauma and trauma-related problems may impede recovery in this group (Fan et al., 2008; Trotta et al., 2015).

Trauma-sensitivity appears to have several positive effects. It may improve the shared understanding of the patient's mental health problems (Muenzenmaier et al., 2015) and increase the patients' confidence in the diagnosis and treatment plan (Grubaugh et al., 2011; Lothian & Read, 2002). Trauma-related problems can be addressed with trauma-informed therapies, such as cognitive behavioural therapy for psychosis (Van der Gaag & Valmaggia, 2014) and trauma-focused therapies, such as prolonged exposure, eye movement desensitisation and reprocessing, or cognitive restructuring (Van den Berg et al., 2015; Van den Berg et al., 2019). The effectiveness of trauma-informed and trauma-focussed therapy in patients with a psychotic disorder emphasises the importance of increasing the trauma-sensitivity of professionals working with this population.

Six factors appear to be associated with low trauma-sensitivity. First, many professionals lack *knowledge* of the impact of trauma on psychosis. This may partially be explained by the emphasis on biological explanatory models of psychosis in the last few decades (Read et al., 2005; Walters et al., 2016; Young et al., 2001) and the fact that trauma is seldomly reported spontaneously by patients (Briere & Zaidi, 1989; Pruitt & Kappius, 1992; Read & Fraser, 1998; Read et al., 2006; Ucok & Bikmaz, 2007). The second factor is low *credibility*, the belief that trauma-sensitivity has little value for the diagnostic proces and treatment indication (Van den Berg et al., 2016a). The third and fourth factor are high *expected burden* and *harm expectancy*, the beliefs that discussing trauma will be either burdensome or harmful for the patient and/or the professional (Van den Berg et al., 2016a). The fifth factor is an experienced lack of diagnostic competence by professionals (Salyers et al., 2004), the experienced lack of the ability to cognitively, emotionally and behaviorally explore trauma exposure and its consequences, to report findings and to containe accompanying emotions. And finally, the sixth factor is lack of organisational support. In literature on general health-care workers' enquiry into domestic violence, the lack of protocols, clear referral pathways, knowledge about local partners to whom to refer and, quality assurance mechanisms were associated with persistent low numbers of enquiry (Hamberger & Phelan, 2006; Harwell et al., 1998; Nyame et al., 2013; Trevillion et al., 2016, 2012, 2014). In the literature on dissemination and implementation of evidence-based psychological treatment posttraining and consultation is being advised (Beidas & Kendall, 2010; Stirman et al., 2009). In short, lack of knowledge, negative attitudes, experienced lack of diagnostic competence, and insufficient organisational structures are expected to perpetuate low trauma-sensitivity and therefore under-treatment.

Previous research into the effects of trauma-sensitivity trainings shows that merely instructing professionals to ask for traumatic experiences or only distributing screening forms is not effective (Dill et al., 1991; Read & Fraser, 1998). Cavanagh et al. (2004) examined the effects of a training programme for mental health staff in which attention was paid to increasing both knowledge and professional skills. Based on the results of self-reports 6 weeks after training, they concluded that the training had led to a significant increase in experienced lack of diagnostic competence, with a limited increase in actual assessment of trauma and trauma symptoms. Walters et al. (2016) examined the effects of a four-hour staff training for the Early Intervention in Psychosis (EIP) service, based on literature and the prior assessment of staff needs. All disciplines including management were invited. A self-report questionnaire completed after 6 months showed an increase in knowledge, experienced diagnostic competence and trauma-sensitive behaviours. However, the concerns of professionals about the negative side-effects of the diagnostic process did not diminish. As the findings were based on self-report only, it is uncertain whether the training resulted in an actual behavioral change of staff. It has been suggested that the most effective training is a highly interactive training, with demonstration of skills, behaviour rehearsal, active participation, performance feedback combined with posttraining consultation (Beidas & Kendall, 2010).

In sum, the studies on the effects of specialised staff training on trauma-sensitivity to date suggest positive effects on knowledge and experienced diagnostic competence. No effects were found for worries of professionals regarding working in a trauma-sensitive way and no study tested for objective indicators of an increase in trauma-sensitive behaviour. The present study elaborates on previous studies by testing the effects of a specialised, highly interactive training on all six aforementioned factors that are expected to influence trauma-sensitivity and by using both self-report and medical files-review of objective indicatons of trauma-sensitive behaviour (assessing trauma, trauma-related problems, and considering implacations for treatment). It was hypothesised that the training would increase knowledge, experienced diagnostic competence, organisational support, and credibility and that it would decrease burden and harm expectancies. Moreover, it was hypothesised that the training would increase trauma-sensitive behaviour, and therefore increase the number of patient files in which trauma-related words were found.

Method

Design

An exploratory naturalistic pilot study was conducted using two quantitative research strategies, i.e. having professionals fill in a questionnaire at four timepoints and screening medical files at three timepoints. The design was submitted to the Regional Review Committee for Patient-Related Research, which established that the design did not fall under the Dutch Medical Research Involving Human Subjects Act (RTPO 1018). The study was carried out in 11 Flexible Assertive Community Treatment Teams (F-ACT teams) of Mental Health Organisation GGZ Friesland. F-ACT is a Dutch variant of Assertive Community Treatment Team (Van Veldhuizen, 2007).

Participants

(Table 1) shows the characteristics of the 56 included participants, all working in one of the 11 F-ACT teams during the 3 years of this study. Two participants were excluded because of incomplete pre-assessments.

Medical reports

Professionals responsible for treatment coordination were selected to review files for written indicators of trauma-sensitive care. Figure 1 presents the process of the selection of the files.

Table 1. Characteristics of the 56 participants of 11 F-ACT teams.

Characteristics	N = 56
Profession	
Nurse	40 (71,4%)
Psychologist	5 (8,9%)
Peer-to peer counsellor	5 (8,9%)
Psychiatrist	2 (3,6%)
Medical doctor	2 (3,6%)
MSc student in psychology	1 (1,8%)
Family therapist	1 (1,8%)
Mean age in years (SD)	47.1 (9.5)
Mean work experience in years (SD)	20.3 (11.9)
Female	57.1 %
Education ≥ bachelor level	87,5 %
Experience with trauma-focussed therapy	16,1 %

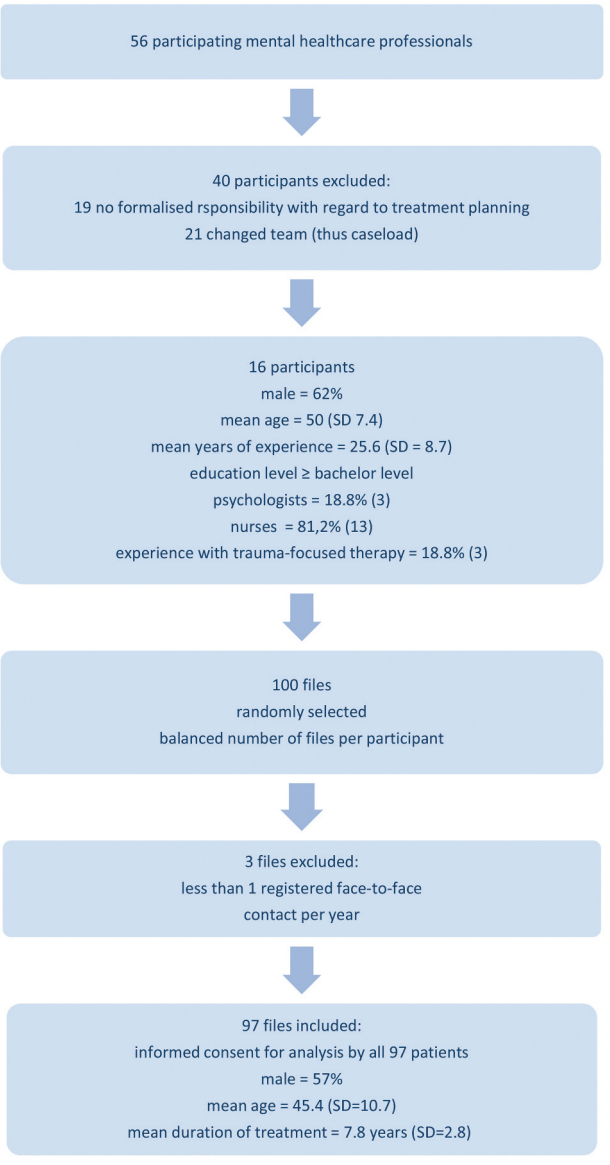


Figure 1. Selectionprocedure of files.

Intervention

The one-day face-to-face training was given by two psychologists. The programme was as follows:

(1) A literature review on patients suffering from psychosis:
   (a) the prevalence of trauma and trauma-related problems, myth-busting professionals' trauma disclosure disbelief (and addressing reliability of trauma reports by people with psychosis);
   (b) the associations between trauma, trauma-related problems and psychosis;
   (c) consequences of not assessing trauma and trauma-related problems;
   (d) advantages and disadvantages of assessment of trauma and trauma-related problems;
   (e) effects of trauma-focused therapies;

(f) the necessity of an organisational context supporting trauma-sensitivity.

(2) An underlining of the importance of:
   (a) reporting the outcomes of the assessment of trauma and trauma-related problems in medical files;
   (b) setting indications for treatment;
   (c) providing psychoeducation including information about treatment options;
   (d) working in a care chain: referrals and cooperation.

(3) Practicing professional competencies in small groups (Stirman et al., 2009), as there were:
   (a) enquiring about trauma and trauma-related problems;
   (b) responding in a compassionate and professional way to disclosure;
   (c) using validated screening tools and a semi-structured interview to assess trauma and posttraumatic stress symptoms;
   (d) an inventory of other trauma-related problems and associations with psychosis.

Techniques used in the training included: a discussion on the literature review, a mini-documentary about patients with a history of trauma and a psychotic disorder, modelling of skills, role-play, and having participants formulate how they are going to implement trauma- and the screening of trauma-related problems in their teams. At 6 months follow-up a reminder of the take-home messages of the training was sent to the participants.

Measures

Questionnaire

Trauma-sensitive behaviours and the factors expected to influence these were measured by a self-report instrument, which was developed by our research team. In the first part of the questionnaire, demographics of the participants were assessed, such as age, gender and profession. The second part of the questionnaire contained 41 statements (e.g. "*Traumas can cause psychosis"; "I feel confident about asking psychosis patients about traumatic experiences"; "To me, it feels like a burden to ask patients with psychosis about trauma")*, which constitute 7 scales (knowledge, credibility, expected burden, harm expectancy, diagnostic competence, organisational support, trauma-sensitive behaviour). The statements were scored on a 7-point Likert scale. Score options range from 1 = "not at all true" to 7 = "completely true". Scores of negatively worded items were reversed.

To explore the reliability of the scales, internal consistency was computed by calculating Cronbach's alphas on the scores at pre-training. Also, the mean inter-item correlations were computed. Four scales (knowledge, credibility, diagnostic competence and trauma-sensitive behaviour) reached acceptable reliability, with $\alpha > .7$ (Field, 2013). For the scales *harm expectancy* ($\alpha = .647$) and *expected burden* ($\alpha = .652$) internal consistency was questionable. The αs "if item deleted" were calculated. For *expected burden* deleting items would not raise α significantly and the meaning of the scale *harm expectancy* would have changed fundamentally if there had been no items referring to expected harm to the professional anymore. Because of the exploratory nature of this study, scores on *expected burden* and *harm expectancy* were used in analyses. The scale *organisational support* still showed poor reliability after deleting one item. Because of poor internal consistency (Field, 2013) and poor mean inter-item correlation (Briggs & Cheek, 1986) scores on the scale *organisational support* were not used in the analyses. Results are presented in (Table 2).

Medical files

Trauma-sensitive behaviour was assessed by counting 26 selected target words in the electronic patient files potentially describing trauma, trauma symptoms or indications for trauma-focused therapy. The target words were Dutch derivates of the words: trauma, shocking, maltreatment, abuse, neglect, rape, sexual assault, bullying, hitting, life-threatening, overwhelming, disaster, war, accident, PTSD, intrusion, memory, EMDR, exposure, trauma-focussed therapy.

Table 2. Descriptive and internal consistency scores based on scores on the seven scales of the questionnaire at baseline.

Scale	N^i	Mean	Min.	Max.	Range	Min/Max	Variance	CA	Mean inter-item corr.	CA If item deleted	N^p
Knowledge	12	3.94	2.07	5.80	3.73	2.80	2.42	.758	.225	.799	56
Credibility	4	5.40	5.04	5.77	0.73	1.15	0.10	.738	.417	.769	56
Expected burden	6	3.08	1.47	4.64	3.16	3.15	1.24	.652	.234	.668	55
Harm expectancy	4	3.03	1.95	3.55	1.61	1.83	0.56	.647	.272	.790	56
Diagnostic competence	6	4.11	2.83	5.06	2.22	1.78	0.61	.833	.478	.839	54
Organisational support	3	4.33	2.76	5.86	3.09	2.12	0.24	.329	.137	.434	55
Trauma-sens. beh.	5	4.85	3.89	6.16	2.27	1.58	0.90	.736	.377	.758	56

Trauma-sens. beh. = Trauma-sensitive behaviour; N^i = number of items; Mean = mean scale score; Min = lowest scale score; Max = maximum scale score; Range = total range of scale scores; Min. = minimum score; Max. = maximum score; Variance = variance of scale scores; CA = Crohnbach's alpha; CA if item deleted = Crohnbach's alpha if item deleted; Mean Inter-item corr. = Mean inter-item correlation; N^p = Number of participants.

The target words were chosen based on the DSM 5 description of PTSD (American Psychological Association, 2013), the *Childhood Trauma Questionnaire-NL* (Thombs et al., 2009), the *Trauma Impact List* (Van den Berg et al., 2016b), the *Trauma Screening Questionnaire* (Brewin et al., 2002) and Clinician Administered PTSD Scale DSM-IV (Blake et al., 1995). Consensus was reached between members of the research group on the included 26 items.

Procedure

Questionnaire

Professionals who participated in the specialised staff training were assessed at baseline in the week before the training, post-training in the week after the training, and at 6- and 12-month follow-up. The questionnaires were provided and completed electronically. Reminders were given after one, three and 5 weeks. In case of no response, participants were motivated by telephone to fill in the questionnaire.

Medical files

Written indicators of trauma-sensitive behaviour were assessed retrospectively. For the pre-assessment year, the target words were counted from 24 till 12 months before training; for the baseline-assessment year in the 12 months before training and for the post-assessment year in the 12 months after the training. As a higher number of target words in a report does not necessarily express higher trauma-sensitivity, dichotomous (yes/no) scores were used to establish whether any target words were present in the patient file at each time point. Figure 2 presents the process of assessment.

Statistical analyses

Statistical analyses were conducted using SPSS 22 (IBM SPSS).

Linear mixed models (LMM; unstructured covariance type) with intention-to-treat were used to test whether knowledge, credibility, harm expectancy, diagnostic competence and trauma-sensitive behaviour changed over time. Dummy variables with recodes of the time points were used to investigate what effects occurred between the different time points (i.e. from pre-training to post-training assessment, from post-training assessment to 6-month follow-up, etc). Single missing items in the questionnaire were replaced by the median score of that item. Although LMM deals rather well with missing data, analyses were repeated using a conservative sensitivity test in which missing assessments for participants were replaced by using last observation carried forward (LOCF).

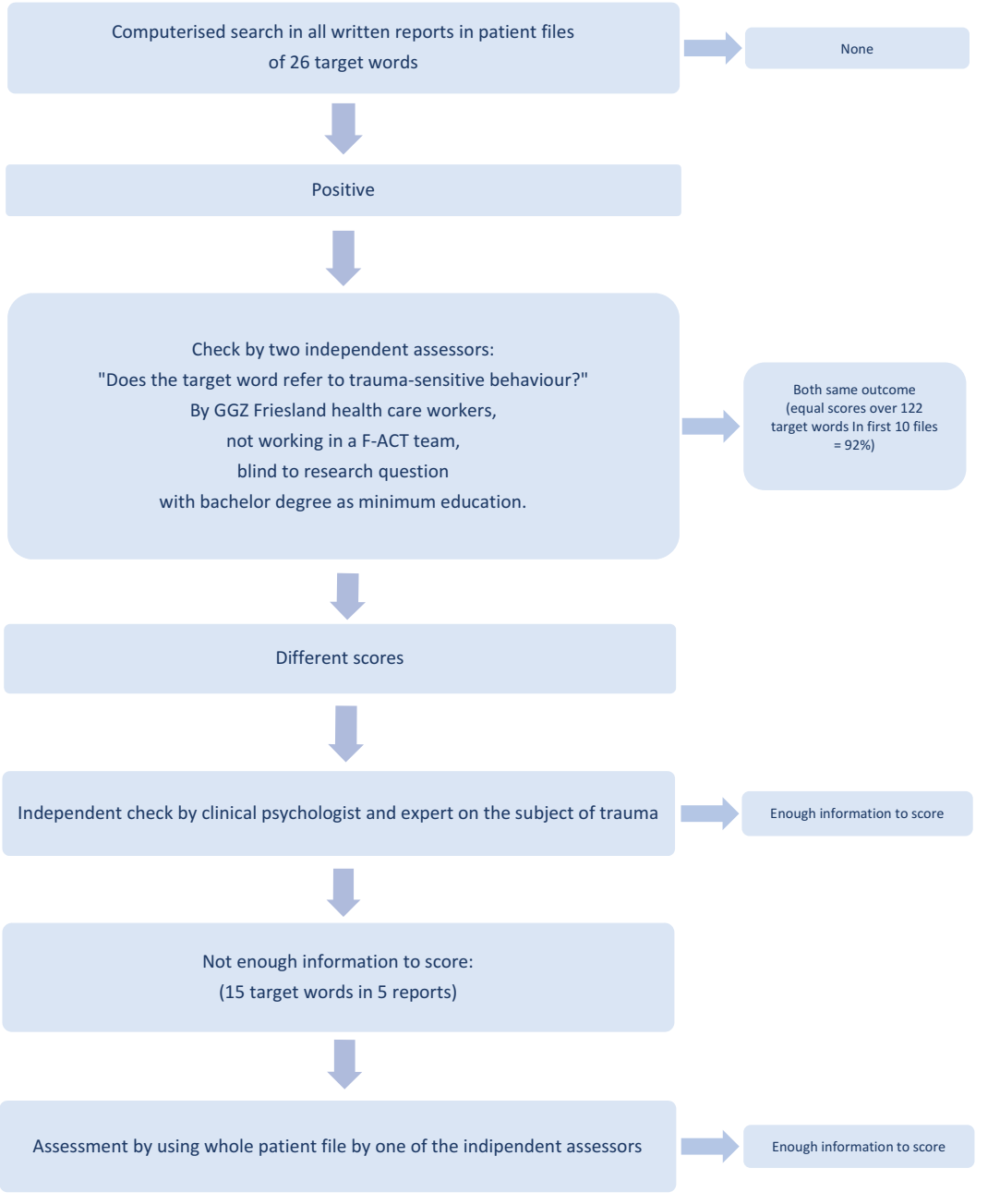


Figure 2. Assessment procedure of target words found in the patient files.

Logistic generalised estimating equations (GEE; Twisk, 2013) with exchangeable correlation structure was used to examine the effects of the three dichotomous variables regarding expressions of trauma-sensitive behaviour in the medical files. Dummy variables with recodes of the time points were used to examine which effects occurred between the different time points.

Results

The influence of the training on the six trauma-sensitivity factors

(Figure 3) presents mean scores at the different time points. In total, 5 participants of the specialised training missed the post-training assessment, 8 participants missed the 6-month follow-up, and 10 participants missed the 12 months follow-up.

Professionals' self-reported knowledge, credibility, diagnostic competence, and trauma-sensitive behaviour increased significantly over time. Professionals' burden and harm expectancies both decreased significantly over time. All effects were observed during the training and remained relatively stable up to 12-month follow-up. See (Table 3) for the outcomes of the LMM analyses.

Differences between pre-training and the 6-months and 12-months follow-up assessments were significant for all outcomes. For most outcomes the sensitivity tests using LOCF were similar to the original outcomes. In these sensitivity analyses, the positive effects on knowledge remained stable in the follow-up period.

The influence of the training on expressions of trauma-sensitive behaviour

(Figure 4) presents the percentages of files in which traumatic events, trauma-related problems and indications for trauma-focused therapy were found at the different time points. The number of words describing *traumatic events* increased significantly over time ($x^2(2) = 19.51$, $p < .001$). The use of these words increased from the pre-assessment year to the baseline year (OR = .651, p = .003) and from the

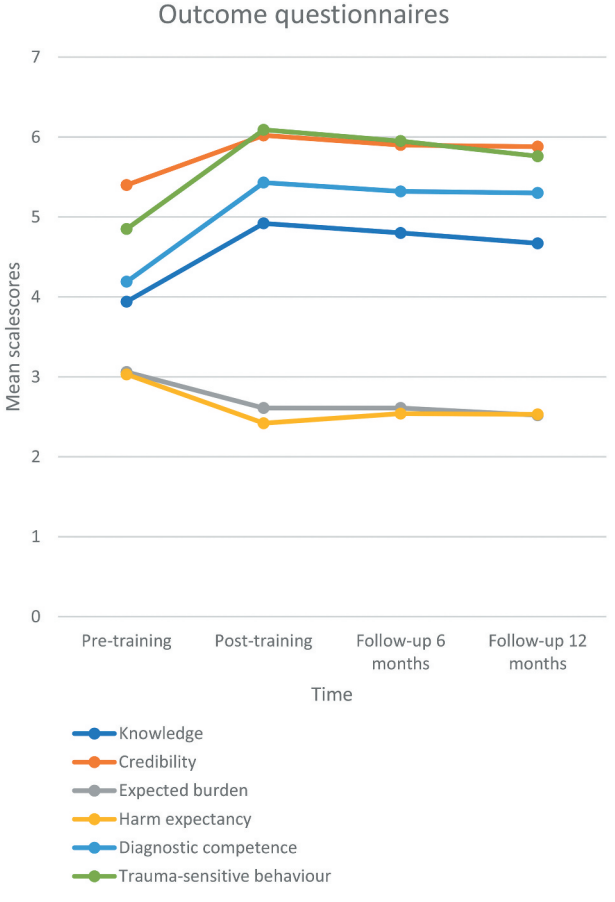


Figure 3. Mean scale scores at the different time points.

Table 3. Outcomes of the linear mixed model analyses.

	Over time F(nom.df., den.df.)	Pre-tr. vs Post-tr.	Post-tr. vs 6-m. follow up	6-months vs 12-m. follow up
Knowledge,	F(3, 48.38) = 57.68 p < .001			
Mdiff.		1.10	−0.26	−0.12
t (df)		11.09 (48)	−2.67 (46)	0.08 (40)
p		< .001	.010	.075
95% CI		[0.91, 1.31]	[−4.61, −0.65]	[−2.62, 0.01]
Credibility	F(3, 48.98) = 9.63 p < .001			
Mdiff.		0.70	−0.21	−0.02
t (df)		4.75 (51)	−1.48 (54)	−0.19 (47)
p		< .001	.146	.850
95% CI		[0.40, 1.00]	[−0.50, −0.08]	[−0.23, 0.19]
Harm experience	F(3, 48.07) = 11.99 p < .001			
Mdiff.		−0.68	0.11	0.11
t (df)		−5.72 (53)	1.04 (48)	0.87 (48)
p		< .001	.303	.387
95% CI		[−0.91, −0.44]	[−0.10, 0.32]	[−0.14, 0.36]
Expected Burden	F(3, 47.03) = 12.83 p < .001			
Mdiff.		−0.52	0.05	−0.07
t (df)		−4.84 (49)	0.44 (48)	−0.80 (42)
p		< .001	.666	.430
95% CI		[−0.73, −0.30]	[0.19, −0.30]	[−0.24, 0.11]
Diagnostic competence	F(3, 50.13) = 43.21 p < .001			
Mdiff.		1.40	−0.31	0.65
t (df)		8.80 (51)	−2.24 (52)	0.71 (45)
p		< .001	.029	.480
95% CI		[1.08, 1.72]	[−0.58, −0.32]	[−0.12, 0.25]
Trauma-sens. beh.	F(3, 43.68) = 30.06 p < .001			
Mdiff.		1.35	−0.26	−0.21
t (df)		7.77 (44)	−1.73 (50)	−1.45 (49)
p		< .001	.089	.143
95% CI		[1.00, 1.70]	[−0.57, −0.04]	[−0.49, 0.07]

Trauma-sens. beh. = *Trauma-sensitive behaviour*; Mdiff. = Mean difference; df = degrees of freedom; p = p-value; 95% CI = 95% Confidence Interval; Pre-tr. = Pre-training; Post-tr. = Post-training; 6-m follow up = 6-months follow up; 12-m. follow up = 12-months follow up; nom.df. = nominator degrees of freedom; den.df. = denominator degrees of freedom.

baseline year to the post-assessment year (OR = .666, p = .002). The number of words describing *trauma-related problems* increased significantly over time ($x^2(2) = 20.56$, p < .001). The use of these words increased from the pre-assessment year to the baseline year (OR = .559, p = .002) and from the baseline year to the post-assessment year (OR = .641, p = .002). The number of words describing *indications for trauma-focused therapy* did not increase over time ($x^2(1) = 3{,}00$ p = .083). The use of these words did not increase significantly from the pre-assessment year to the baseline year (OR = .554, p = .083) nor from the baseline year to the post-assessment year (OR = 1.000, p = 1.000). The confidence intervals are available in the supplement (supplementary Table S4). Usage of all three categories of words associated with trauma-sensitive behaviour, did not increase more after training than in the period before the training. No new indications for trauma-focused therapy were reported after training.

Discussion

To our knowledge, this pilot study is the first to examine the effects of a specialised, highly interactive training for professionals working with patients with a psychotic disorder on factors expected to influence trauma-sensitivity. Also, to the best of our knowledge this is the first study that incorporated an objective indicator of trauma-sensitive behaviour. Significant positive effects on factors expected to increase trauma-sensitivity were observed. As hypothesised, there was a significant increase of knowledge, diagnostic competence and credibility and a significant decrease of both burden and harm

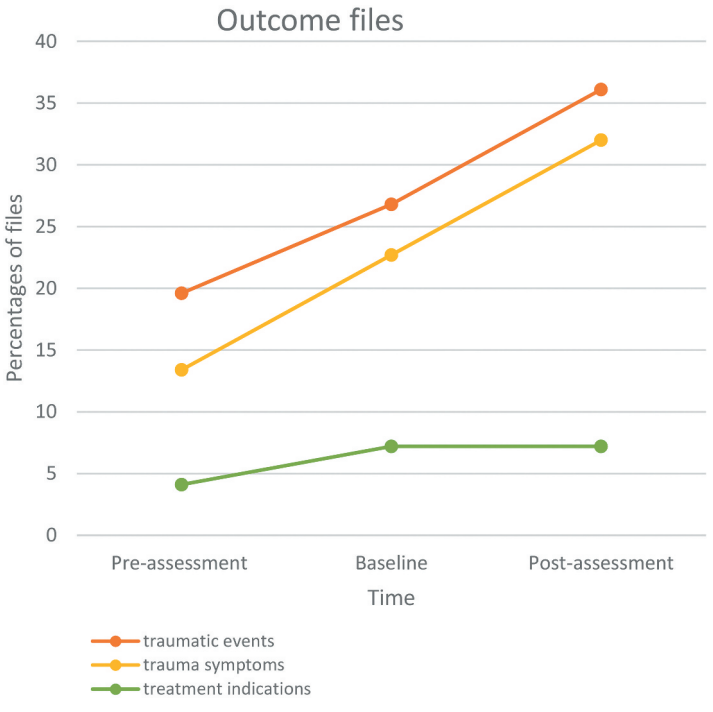


Figure 4. Observed percentages of patient files in which target words were found.

expectancies. Improvements were sustained at one-year follow-up. These results are in line with earlier findings (Cavanagh et al., 2004; Walters et al., 2016). In contrast to the study of Cavanagh et al. (2004), a decrease of worries experienced by professionals was observed in the current study. We observed an increase in self-reported trauma-sensitive behaviour, but not in written indicators of trauma-sensitivity in the patient files. The number of files in which trauma, trauma-related problems or indications for trauma-focused therapy were reported did not increase more in the year after than in the year before the training. Also, the number of files in which traumatic events were reported was still quite low at post-assessment suggesting that the training did not improve the reporting of trauma in files.

The increase of the number of files in which target words were found before the training might suggest there already was a growing trauma-sensivity before the training. But as there were significant changes in the week between the pre-training and post-training in factors associated with trauma-sensitivity, it is unlikely that these very direct pre-post changes were due to a potentially already increasing trauma-sensitivity. The results of this study therefore suggest that the specialized training positively influences trauma-sensitive beliefs and subjective experienced trauma-sensitive behaviour, but that it does not result in actual behaviour-change of trained professionals. This finding is in line with the idea that there is an implementation continuum moving from awareness, to knowledge, to the ability to perform and finally to the actual performance of new behaviour (Ruzek, 2019).

There are several other explanations for the discrepancy between the self-reported trauma-sensitive behaviour and the expressions of trauma-sensitive behaviour found in the chart-review. In the first place, the increased realisation that trauma is highly important in psychosis may have led to an answering tendency in favour of the goals of the training on the questionnaire. In the second place, an increase of trauma-sensitive behaviour may have been missed due to missing target words. In the 26 trauma-related target words there was a focus on PTSD criteria and not all types of trauma known to be strongly associated to psychosis were included, for example, racism and poverty. Also,

not all types of trauma-related problems were included. In the third place, reports may not reflect all trauma-sensitive behaviours because of lack of time to report all clinical activities accurately, even though the importance of reporting trauma-sensitive behaviour in patient files was addressed in the training. For instance, we observed omissions of important aspects of medical files (like updated treatment plans) in a significant proportion of the medical files. In the fourth place, the participating professionals had a rather high mean of years of work-experience. It is conceivable that it may have been more difficult for them to change their clinical routines thereby masking the effects of the training. The discrepancy between the increase of self-reported trauma-sensitive behaviour and the outcome of the chart-review underlines the importance of including an objective indicator like the chart-review in this type of research.

This study has several limitations. There was no control group and participants in the training were not randomly selected. The questionnaire has not been fully tested on reliability and validity, conclusions should therefore be interpreted with caution. Two scales were of questionable internal consistency, limiting its reliability. This study was also hampered by a number of external difficulties. Turnover of personnel working in the F-ACT teams was high, lowering transfer of knowledge under colleagues (Woltmann et al., 2008). Also, a reorganisation of the F-ACT teams demanded workers' attention and may have limited their time for innovation, such as increasing trauma-sensitive behaviour. And finally, the scale organisational support was found to be unreliable and therefore could not be used in this study. As a result we cannot draw any conclusion about this factor. We did, however, observe that there was no centrally organized and structured implementation plan with standard procedures regarding trauma-sensitive care and reporting about this in the medical files. Given this fact, the behaviour-change may have become an individual responsibility, a strategy that has been demonstrated to be ineffective before (Dill et al., 1991). In the literature on disclosing domestic violence in mental health settings, a subject with many parallels with disclosing trauma history, lack of organisational support and embedding were identified as important factors to attend to when improving disclosure in patients (Hamberger & Phelan, 2006; Harwell et al., 1998; Nyame et al., 2013; Trevillion et al., 2016, 2012, 2014). A clear policy and associated working procedures are important prerequisites for creating a trauma sensitive working culture (Toner et al., 2013).

Conclusions

Trauma and trauma-related problems often remain undetected in people with psychosis, which may decrease the quality of life and increase risk of re-traumatisation (Van den Berg et al., 2016b). This study evaluated the effects of a specialized one-day staff training aimed at increasing trauma-sensitivity and diagnostic skills with regard to trauma, trauma-related problems, and setting indications for trauma-focused treatment. The first signs of effectiveness of the training were demonstrated for factors expected to influence trauma-sensitivity. Participants also reported an increase of trauma-sensitive behaviour, but this could not be objectivied in this study. It is argued that organisational support and structured implementation, such as peer consultation, the implementation of clear working procedures, and the availability of clear referral pathways are a prerequisite for increasing trauma-sensitive behaviour.

Future studies could explore the association between the six trauma-sensitivity factors and (objective) trauma-sensitive behaviours by professionals. In our opinion this specialised training can be used in future research in a similar design, since it appears to be feasible and acceptable if a number of necessary improvements are made. The questionnaire needs further development, a controle group should be added and participants should be selected randomly, the numbers of participating professionals and patients could be increased, organisational support should be guaranteed, and an implementation plan should be developed alongside the training. Searchterms for the objective indicators of trauma-sensitive behavior should be extended and psychosis could be included as a consequence of trauma. Also, patients' views on the trauma-sensitivity of their caregivers could be included. Since staff turnover is high, training should periodically be repeated until a trauma-sensitive attitude has become

a basic competence acquired in mental healthcare training. Adequate trauma-sensitivity is a "sine qua non" in the care for people with psychosis and should be the norm.

Authors' contributions

De Bont, Van der Vleugel, Van den Berg, Boonstra, and Visser designed the study and wrote the protocol. Visser conducted the literature search and the management of the study. Van den Berg, De Bont and Van der Vleugel designed the training, De Bont and Van der Vleugel delivered the training. Visser and Van der Vleugel were involved in the acquisition of data from the questionnaire, Visser was involved in the acquisition of data from the medical files, Boonstra supervised this process. Visser and Van den Berg conducted the statistical analyses and the interpretation. Visser wrote the first draft of the manuscript. All authors contributed to and approved the final manuscript.

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Disclosure statement

Van den Berg received income from published books on psychotic disorders. Van den Berg, De Bont and Van der Vleugel receive income from training postdoctoral professionals in trauma-informed and trauma-focused treatment in psychosis. Boonstra receives income from training postdoctoral professionals in the treatment of psychotic disorders. The other authors declare that they have nothing to disclose. The views expressed in this article are those of the authors and do not necessarily reflect the opinions of the authors' institutions.

ORCID

David van den Berg http://orcid.org/0000-0002-8797-8217

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