"At the end of the day, ain't nobody else gonna walk in your shoes, quite the way that you do. So be at peace with yourself."

Bill Fay, lyrics from 'Be At Peace With Yourself'
CHAPTER 8

General discussion
MAIN FINDINGS

Short summary of our findings
The main objective of the work presented in this thesis was to test whether standard trauma-focused treatment protocols, with direct exposure to trauma memories, were effective and safe in treating posttraumatic stress disorder (PTSD) in patients diagnosed with a psychotic disorder. In CHAPTER 2 standard eye movement desensitization and reprocessing (EMDR) therapy - without any modifications - was found to be a feasible treatment in patients with psychosis that effectively reduced PTSD symptoms. Treating PTSD enhanced self-esteem and ameliorated symptoms of anxiety and depression. Auditory verbal hallucinations and delusions showed small but statistically significant reductions, while paranoid ideation and feelings of hopelessness did not change. The multicenter randomised controlled trial (RCT; CHAPTER 3) showed that both standard prolonged exposure (PE) and EMDR protocols were more effective than a waiting list condition in reducing PTSD symptoms and negative posttraumatic cognitions in patients with severe and long-term psychotic disorders, including current symptoms. These results were maintained at 6-month follow-up. PE and EMDR had generalised effects; both treatments reduced paranoid ideation and resulted in more remission from psychosis. PE also reduced depression. However, at a group level, neither PE nor EMDR had a significant effect on auditory verbal hallucinations and social functioning (CHAPTER 4). Contrary to the expectation of most clinicians, trauma-focused treatment was associated with less symptom exacerbation, less adverse events, and a reduction in revictimization compared to waiting list for PTSD. Also, dropout was not related to symptom exacerbation (CHAPTER 5). Psychosis-specific baseline factors were of little predictive utility for trauma-focused treatment outcome or dropout (CHAPTER 6). The specialised trauma-focused treatment training for the participating therapists in the trial, including practical training with supervision, appeared to have a positive effect on therapists’ credibility, burden and harm beliefs concerning trauma-focused treatment in patients with psychosis (CHAPTER 7). The results presented in this thesis clearly show that the use of standard trauma-focused treatment protocols in patients diagnosed with psychotic disorders is both effective and safe. However, because our RCT was the first to use standard trauma-focused treatment protocols, we emphasise that replication in another high-quality RCT is required.

Effectiveness of trauma-focused treatments in psychosis
In this thesis, the positive results found for both PE and EMDR in patients with psychotic disorders\(^1\)\(^2\) are in line with a pilot study (n=10) that found that both PE and
EMDR effectively reduce PTSD symptoms in patients with psychotic disorders,\(^3\) and with another pilot study (n=20) that found PE to be effective in this patient group.\(^4\) A recent open pilot study also found good results after testing PE in 34 veterans with severe mental illness, of which a significant proportion met the criteria for a psychotic disorder.\(^5\)

As mentioned before, no other RCTs have been published that investigated PE or EMDR in samples of participants with psychotic disorders. However, we can compare our outcomes with studies that used other interventions in this population or used comparable samples, i.e. participants with severe mental illnesses. To date, two RCTs have tested the effectiveness of a 12-16 session cognitive restructuring protocol\(^6\) that was adapted for patients with severe mental illness.\(^7,8\) The most important adaptation was the exclusion of exposure. Note, however, that in these two latter trials, only a minority of the participants had a primary diagnosis of psychotic disorder (15.7% and 33.3%, respectively). In both trials, the adapted cognitive restructuring protocol was found to effectively reduce PTSD symptoms at posttreatment in the participants with severe mental illness; these results are in line with the pilot study that this same research group performed before their first RCT.\(^9\) Also, similar to our trial, in both trials the effects were maintained on the long term (6 and 12 months, respectively). Unfortunately, the authors did not publish the outcomes of the psychosis subgroups. However, in a recent meta-analytical review of psychological treatments for trauma in patients with psychosis, data on the psychosis subgroups were included.\(^10\) This meta-analysis revealed that there were no statistically significant differences in any of the outcomes between the adapted cognitive restructuring protocol and the control groups (treatment-as-usual,\(^7\) and three sessions of breathing retraining and psycho-education).\(^8\)

Another RCT using the cognitive restructuring protocol (as adapted by Mueser et al. 2004) in a sample of participants in the UK with a psychotic disorder (n = 61) found no beneficial effect of the adapted cognitive restructuring protocol on PTSD or symptoms of psychosis, compared to routine clinical services for psychosis. In that trial, both the experimental and control group showed modest improvements in PTSD symptoms. However, an important limitation of that study is that the entry criteria were broadened (PTSD criteria C and D were omitted) due to lower than anticipated recruitment rates. As a result, only 34 of the 61 participants met the full criteria for PTSD and the mean baseline CAPS severity score was 53.3. This is lower than the baseline CAPS score in our trial (mean = 69.9).
In summary, for PTSD symptoms there is some evidence to support the effectiveness of standard PE\textsuperscript{12} and EMDR\textsuperscript{13} protocols in patients with psychotic disorders. Moreover, the adapted cognitive restructuring protocol appears to have merit in treating PTSD in patients with non-psychotic severe mental illness; however, the available data do not support its efficacy in patients with a primary diagnosis of psychosis. Head-to-head comparisons of these treatments in patients with psychotic disorders are needed.

**Safety of trauma-focused treatment in psychosis**

Contrary to the beliefs of the majority of clinicians,\textsuperscript{14-17} we found trauma-focused treatments to be feasible and safe in patients with psychotic disorders and to have less symptom exacerbation, less adverse events, and a reduction in revictimization compared to waiting list for PTSD. Even in the first trauma-focused sessions, symptom worsening was virtually absent, and symptoms generally showed a tendency to decline.\textsuperscript{18} This is confirmed by the fact that none of the trauma-focused treatment studies on psychosis published to date reported an increase in adverse events or a high rate of exacerbation of PTSD symptoms.\textsuperscript{1-5,7-11} In addition, in our trial the dropout rates were comparable to those in general PTSD samples;\textsuperscript{19} also, we found dropout to be unrelated to symptom exacerbation or treatment outcome.\textsuperscript{18} All this suggests that conventional trauma-focused treatment protocols can be safely applied in patients with psychosis, without negative side-effects.

**Positive side-effects of trauma-focused treatment in psychosis**

Our study was the first to suggest that revictimization may decrease after trauma-focused treatment. Although this finding needs to be replicated, it may indicate that individuals indeed become more resilient when PTSD symptoms abate. However, this effect may also be explained by a reduction in negative evaluations (or negative threat perceptions) of interactions with other people; more studies are required to test these hypotheses.

In both our pilot study and RCT, comorbid symptoms (e.g. psychotic symptoms) decreased or remained stable in the trauma-focused treatments groups.\textsuperscript{1,18,20} This appears to be a recurrent finding in trauma-focused treatment trials in both general PTSD samples\textsuperscript{11} and samples of patients with psychotic disorders or other severe mental illnesses.\textsuperscript{3,4,7-9,11} This tentatively suggests that effectively treating PTSD in these patients with complex combinations of severe symptoms may be an efficient first intervention, because many other symptoms also appear to decrease;\textsuperscript{21} e.g. paranoia\textsuperscript{20} and depression.\textsuperscript{22} These effects may be understood from the network perspective of psychopathology.\textsuperscript{23} The network approach does not consider symptoms to be passive expressions of an
underlying disorder, but postulates that symptoms actively interact with each other in dynamic networks.\textsuperscript{24} Apparently, treating PTSD affects other symptoms in the network. PTSD symptoms probably have dominance in the psychopathology network, e.g. reducing PTSD symptoms often results in a reduction of depression,\textsuperscript{21,22,25} while there is little evidence for the reverse. Additional studies are required to test this proposed dominance of PTSD within the psychopathology networks.

In summary, effectively treating PTSD may be a sensible first intervention in patients with complex combinations of psychopathology, as generalization to other symptom domains has been documented.

\textit{Direct trauma memory exposure in patients with psychosis}

Trauma-focused treatments for PTSD are more effective than both non-trauma-focused psychotherapies and pharmacological interventions.\textsuperscript{26} Cognitive behaviour therapy (CBT) is the most frequently studied psychological treatment for PTSD in general PTSD samples, and both CBT based primarily on cognitive therapy and CBT based mainly on exposure have a strong track record, e.g.\textsuperscript{26,27} The most studied cognitive therapy protocols also include at least a certain amount of direct trauma memory exposure.\textsuperscript{28,29} However, based on the assumption that direct exposure to trauma memories would be too difficult to tolerate for patients with severe mental illness, the adapted cognitive restructuring protocol of Mueser et al. (2004) avoids direct trauma memory exposure and does not include behavioural experiments. With this adaptation, the cognitive restructuring protocol was not found to be effective in reducing PTSD symptoms in patients with psychotic disorders.\textsuperscript{10} In comparison, the four pilot studies and the trial that used protocols with direct trauma memory exposure in patients with psychosis, did find significant effects on PTSD symptoms and also found direct trauma memory exposure to be tolerable.\textsuperscript{1-5}

All trauma-focused treatments (CBTs and EMDR) target negative trauma-related beliefs, e.g. ‘the world is a dangerous place’.\textsuperscript{30,31} The most frequently used instrument to study negative trauma-related beliefs is the post-traumatic cognitions inventory (PTCI).\textsuperscript{32} Although CBT dismantling studies have led to some discussion e.g.,\textsuperscript{33} all forms of CBT are more effective in reducing negative trauma-related cognitions than both active and non-active control conditions.\textsuperscript{34} Unfortunately, little is known about the effects of EMDR on trauma-related beliefs; to our knowledge, ours is the first study on EMDR that included a valid measure of trauma-related cognitions (for which we found positive effects for EMDR). Both cognitive restructuring alone (without any exposure),\textsuperscript{35}...
exposure alone, and therapies that combine exposure and cognitive restructuring reduce negative trauma-related cognitions. However, a meta-analysis showed that treatments with (imaginal and in vivo) exposure alone, and treatments that combine cognitive restructuring and imaginal exposure, show the largest effects in reducing negative posttraumatic cognitions. The adapted cognitive restructuring protocol of Mueser et al. (2004) is a treatment with cognitive restructuring alone (without direct trauma exposure and behavioural experiments). No significant effects were found on negative trauma-related beliefs as measured with the PTCI in any of the three trials using this adapted protocol for patients with psychosis. In comparison, in our trial both the standard PE and EMDR protocols (with direct trauma memory exposure) resulted in a large reduction in negative post-traumatic beliefs (CHAPTER 3).

We acknowledge that treatments with cognitive restructuring alone, such as the adapted Mueser et al. (2004) protocol, do involve a certain degree of exposure, because patients reflect on their interpretations of what happened and are encouraged to develop a more functional understanding of this. However, these levels of exposure are much smaller and more indirect than in PE and EMDR. Treatments that have direct trauma memory exposure as a core element (such as PE and EMDR) may be effective in patients with psychotic disorders, because this demands less of the cognitive abilities of the patient than cognitive restructuring without direct trauma memory exposure. This may be an advantage in a population that is characterised by problems in cognitive functioning and high levels of dissociation and avoidance. This hypothesis is supported by a process analysis of the therapy sessions of the trial by Steel et al., showing that the emotional intensity during cognitive restructuring was insufficient to support emotional processing. In contrast, PE and EMDR are experiential in nature. Avoidance behaviours are omitted and patients experience that they can handle their own negative memories, which challenges negative harm expectancies. Maybe, in these patients with severe psychopathology, the explicit and implicit experiential inhibitory learning induced by treatments with direct exposure to trauma memories is more efficient and effective than trying to enhance insight via the restructuring of cognitions. This is supported by the fact that effective CBT protocols for psychosis are built around experiential learning through behavioural experiments.

In summary, direct exposure to trauma memories may be an important component of trauma-focused treatments in patients with psychotic disorders. Future studies should make a head-to-head comparison of trauma-focused treatments with and without direct trauma memory exposure in patients with psychosis.
Whither psychotherapeutic stabilization in patients with psychosis?

In our trial, trauma-focused treatment was not preceded by psychotherapeutic stabilization; nevertheless, our results show that PE and EMDR could be applied without adaptations in a sample of patients characterised by both severe childhood trauma and complex adult psychopathology. However, all participants received treatment-as-usual for psychosis parallel to the trauma-focused treatment, which varied greatly in intensity. There is an ongoing debate in the field of traumatology concerning the necessity of preceding trauma-focused treatments with a comprehensive psychotherapeutic 'stabilization phase', especially in patients with multiple childhood traumas and severe psychiatric disorders. Advocates of psychotherapeutic stabilization argue that this prevents adversities, improves outcomes, and reduces the likelihood of dropout in patients with 'complex PTSD'. However, complex PTSD is a problematic concept with questionable validity. Moreover, these presumptions have been challenged by experts who emphasise that the available data do not support these claims. In fact these experts hypothesise that a pre-treatment stabilization phase may worsen outcomes, because it delays the delivery of evidence-based treatments. Stabilization may also have unintended iatrogenic effects because therapists implicitly convey harm expectancies concerning trauma-focused treatment, e.g. 'this treatment may be dangerous for you,' ‘you may not be able to tolerate this,’ 'you may be too vulnerable,' ‘you’re a difficult and problematic case,' or 'I'm insecure about treating you,' etc. This may induce fear, undermine motivation, reduce hope and, paradoxically, increase the chance of dropout. Interestingly, we observed that trauma-focused treatments in fact reduced adversities in patients who are generally considered to be 'highly vulnerable.' Also, importantly, we found that participants that met the criteria for the DSM5 dissociative subtype of PTSD, benefitted as much from trauma-focused treatment as participants without dissociative symptoms.

Advocates of psychotherapeutic stabilization also postulate that stabilization will decrease the chance of dropout in patients with complex PTSD. However, dropout rates in trials testing the effects of stabilization in complex patient groups have generally been high. (with the exception of a study in a sample of incarcerated women that, apparently, would have had to escape prison in order to discontinue treatment.) In an open pilot study with PE in patients with psychosis that adopted a pre-treatment stabilization phase, 35.0% dropped out; interestingly, in that study, all dropout occurred during the 7-week stabilization phase. However, in the latest open pilot study by this same research group, the stabilization phase was reduced to only two sessions that comprised psycho-education regarding PTSD, discussing common reactions to trauma, discussing expectations for treatment, and introducing diaphragmatic breathing and progressive
muscle relaxation; in that pilot study, many participants (41.7%) dropped out. Although the protocol of Mueser et al. (2004) does not include a formal stabilization phase, the first four sessions are spent on introduction, crisis plan review, psycho-education, and breathing retraining. In the pilot study of Rosenberg et al. (2004), 49.9% discontinued treatment, and in the study of Mueser et al. (2008) 29.6% of the sample stopped prematurely. In another study by Mueser et al. (2015), 32.7% did not receive a minimal treatment dosage of at least 6 sessions; unfortunately, dropout rates were not reported, but additional dropout probably occurred between sessions 7 and 16. In the RCT of Steel et al. (2016) that used the same protocol, 30.0% of the participants dropped out. In our studies we spent 1 session on psycho-education and building a hierarchy of the most relevant trauma memories, and then started PE or EMDR in session 2. In our RCT, the dropout rates were 24.5% (PE) and 20.0% (EMDR), respectively, and 18.5% in the open EMDR pilot study. Another pilot study that adopted a similar approach (1 session of psychoeducation and selection of memories) with both PE and EMDR, reported a 20% dropout rate. These latter dropout rates (i.e. 18.5-24.5%) are similar to those in a review of dropout rates in trauma-focused treatments in general PTSD samples.

It is important to note that no study on trauma-focused treatment in psychosis has directly compared the same trauma-focused treatment with and without a pre-treatment psychotherapeutic stabilization phase; this is an interesting design for future studies. However, it is important to note that studies that spent little or no time on psychotherapeutic stabilization produced the best results with respect to both outcome and dropout. In patients with a combination of psychosis and PTSD, directly treating PTSD with trauma-focused treatment may in fact be the most stabilizing intervention available.

**Predicting outcome of trauma-focused treatment in psychosis**

In our sample of patients with long-standing psychotic disorders, we found that baseline psychosis-specific factors (paranoia, auditory verbal hallucinations, negative symptoms, suicide risk, the presence of recent adversities, working memory capacity, and chlorpromazine hydrochloride dose equivalents) and baseline PTSD severity had little value in predicting trauma-focused treatment outcome and dropout. Baseline PTSD symptom severity was found to predict only a small proportion of treatment outcome. Interestingly, participants with more severe baseline PTSD symptoms exhibited a higher posttreatment PTSD symptom severity end state, but also a greater reduction in PTSD symptoms; this was also observed in a study including a general PTSD population. This may indicate that participants with high baseline PTSD severity responded well, but that some may have needed more than eight sessions (which was the maximum
treatment dosage in our study). One study did indeed find that additional sessions enhanced treatment outcomes in patients who did not improve sufficiently after a standard treatment dosage.\textsuperscript{47} Interestingly, in the trial of Mueser et al. (2008), treatment appeared to be more effective in the participants with more severe PTSD. Also, in our trial, therapists rated trauma-focused treatment as more credible in patients with higher baseline PTSD symptom severity scores (CHAPTER 7). It is possible that therapists reasoned that with clear and severe PTSD symptoms, therapy would probably be effective because that is precisely what this treatment is designed for.

We conclude that the data available at this time do not justify the use of pre-treatment characteristics to exclude patients with psychotic disorders from treatment with PE and EMDR. In addition, eight sessions may be too few for some patients. Additional studies are needed to test whether adding more sessions of standard PE or EMDR may enhance the treatment effects.

\textit{General methodological considerations}

Importantly, before decisive conclusions can be drawn, the findings from our trial need to be replicated by another research group using a similar rigorous design. Because the previous chapters have discussed specific study limitations and strengths, below we describe some general limitations that need to be taken into consideration.

First, our work was performed within the context of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). However, psychological experiences and problems do not necessarily ‘reside’ in diagnostic DSM containers, but may interact in complex networks.\textsuperscript{23} Moreover, in the DSM the ‘disorders’ are defined in such a way that they are not mutually exclusive. More specifically, symptoms of psychosis and PTSD overlap.\textsuperscript{48} Our results (e.g. the effects on paranoia and negative post-traumatic cognitions) should be interpreted with this limitation in mind.

Second, in our trial we observed a decrease in PTSD symptoms in the control condition. Over a period of three years, spontaneous remission from PTSD occurs in a significant proportion of individuals diagnosed with this disorder.\textsuperscript{49} However, in our trial, spontaneous remission was unlikely because the mean duration of PTSD was 21 years (SD = 13.5). Symptom fluctuation is another factor that may have influenced our outcomes, because in some patients the PTSD symptoms can fluctuate over time.\textsuperscript{50} Also, PTSD symptoms can fluctuate around the diagnostic boundaries of meeting the criteria for PTSD. As a result, patients that are in a temporary low state of PTSD symptoms
will not be recruited into a study, whereas patients in a high PTSD state will be deemed eligible for participation. On average these latter participants will be at a lower PTSD state at any successive assessment (i.e. regression to the mean). We neglected to control for this phenomenon by, for instance, adopting a repeated eligibility assessment with a time interval, in which only patients that meet the full PTSD criteria at both assessments would be included in the trial. However, in our inclusion interview we did ask whether the severity of PTSD symptoms in the last week (the reference period of the CAPS that we used) was representable for the preceding months. If not, we assessed whether the symptoms continuously met the criteria for PTSD in the last three months (for a diagnosis of chronic PTSD). Consequently, we do not expect symptom fluctuation to have had a meaningful influence on the outcomes of our trial. Nevertheless, we cannot rule out that ‘non-specific’ factors, such as recognition of the traumas, hope and support, may have influenced the outcomes.

Third, all participants in our trial were exposed to an extensive and detailed trauma interview and repeated assessments of PTSD symptoms. This may have had some therapeutic effects, also in the control condition. There were incidents in our trial in which participants indicated that they experienced the trauma interview as ‘a session of exposure’, and that they were strengthened by the experience that they were able to endure it. Future studies should test the direct effects of extensive trauma interviews on the severity of PTSD symptoms in patients with psychosis.

Fourth, we tested a maximum dosage of only eight sessions of trauma-focused treatment, rather than a full therapy. Some of the severely traumatised participants may have benefitted from more sessions. As a result, the treatment effects observed in our trial may have been an underestimation in relation to a full treatment dosage.

Fifth, a six-month follow-up (including all the arms in our trial) and a twelve-month follow-up including only the two trauma-focused treatment arms (not presented in this thesis) showed that the positive outcomes at posttreatment were maintained over time. However, we were unable to test outcomes on the longer term. In these patients with long-term and severe psychopathology, recovery will take more time than a few months for most individuals and, consequently, longer term outcome measurements would have been desirable.

Sixth, because not all studies presented in this thesis were designed as stand-alone studies (i.e. CHAPTER 6 and 7), these studies were somewhat limited in their design or statistical power.
Seventh, all the studies in this thesis were conducted in the Netherlands and all participants were receiving treatment-as-usual for psychosis, besides the trauma-focused treatment. Multidisciplinary assertive community mental healthcare teams deliver this care in the Netherlands. These teams offer a broad range of interventions and scale-up the intensity of care if necessary, depending on the (acute) needs of service users. In this way, these teams can provide considerable support and can be expected to have a ‘stabilizing’ effect on patients. However, it is important to note that in our trial we did not observe differences in the support provided by caregivers between the trauma-focused treatment conditions and the waiting list condition, indicating that patients in the trauma-focused treatment conditions were not in need of more ‘support’ due to undergoing trauma-focused therapies; this is in line with our findings that symptoms do not exacerbate during trauma-focused treatment.

The strengths of our RCT are the fact that we met all the criteria for the consort statement and adopted rigorous procedures, which resulted in a high-quality study with reliable data. With regard to dissemination, it is a strength that the trial was 1) set-up in routine clinical settings, 2) included ‘real’ patients with severe and complex psychopathology, 3) had ‘real’ therapists who were (mainly) inexperienced in providing trauma-focused treatment before the start of the trial, and 4) the fact that we applied virtually no exclusion criteria.

CLINICAL IMPLICATIONS

Returning man to the equation
Unfortunately, many patients with psychosis suffer stigmatization, both within and outside the mental healthcare sector. This may partly have been induced by pervasive theories that are not based on empiricism, e.g. a division of the human race into neurotic, borderline, and psychotic ‘organised’ individuals.53 These and other factors have resulted in widespread beliefs about individuals with psychosis, e.g. that they cannot benefit from psychotherapeutic treatments, or that adverse life events are no more than triggers for an underlying genetic vulnerability. Also, for many years, childhood sexual abuse was under-recognised. Incest was considered to occur in only 1 in a million women, and was even hypothesised to be protective of psychosis.54 As a result of the foregoing, both trauma and PTSD were mainly ignored in patients with psychosis, and patients with psychosis and PTSD were withheld from trauma-focused treatment. Therefore, we conclude that, as a sector, we have been ‘neglecting the neglected’ for decades.
We now know that many individuals with psychosis have suffered childhood trauma,\textsuperscript{55,56} that 12.4-16.0\% of patients with a psychotic disorder meet the full criteria for PTSD,\textsuperscript{55,57} that this negatively influences well-being and prognosis,\textsuperscript{58,59} but goes unrecognised by clinicians in 96.9-100.0\% of the cases.\textsuperscript{55,60} Paradoxically, the ‘lucky’ few in whom PTSD is diagnosed have little chance of being offered an evidence-based trauma-focused treatment.\textsuperscript{14-17,61} These findings are in line with a more broad psychotherapeutic neglect of patients with psychosis and with a general under-utilization of evidence-based trauma-focused treatments in PTSD.\textsuperscript{52,63} For example, although more than ten meta-analytical studies have shown that CBT for psychosis (CBTp) is an effective treatment, e.g.,\textsuperscript{64} only about 5-10\% of the patients with a psychotic disorder is offered CBT.\textsuperscript{65,66} Similarly, only 6.3\% of the patients of six specialised PTSD outpatient veteran units in the USA (n=1,924) received at least one session of evidence-based trauma-focused treatment during the first six months of their treatment.\textsuperscript{67}

Clinicians should be attentive to trauma in individuals with psychotic disorders, and include these experiences in the process of diagnosis and treatment planning. This already happens in CBTp in which the patient and therapist together develop a case formulation that includes important life experiences, including trauma, and their direct and indirect consequences for the individual.\textsuperscript{68} In our opinion, trauma-focused treatment can be preceded and/or followed with CBTp in patients with both PTSD and psychosis. For instance, a patient may first receive trauma-focused treatment and then continue with CBTp. Other professionals, such as nurses, social workers, psychiatrists, and experts by experience, should adopt a similar approach in conceptualizing and planning their interventions.

The fact that standard trauma-focused treatments appear to be both effective and safe in patients with psychotic disorders, adds to the accumulating knowledge base that psychotherapies can be efficacious in this group. In particular, our findings indicate that patients with both a psychotic disorder and PTSD may be offered trauma-focused treatment and that (for most) this will result in a significant improvement on several symptom domains.

Finally, most psychoses do not occur in the context of a diagnosis of schizophrenia,\textsuperscript{69,70} whereas many clinicians consider all psychoses to be a very severe mental disorder due to the connotation of schizophrenia. We should stop using diagnostic labels as an exclusion criterion for evidence-based trauma-focused treatments, because we now know that these labels have limited validity and have little value in predicting who will
and who will not benefit from treatment. Instead, we believe that we should improve our understanding of what specific factors influence trauma-focused treatment outcome and develop meaningful criteria to match specific individuals to specific treatments.

The dissemination challenge

Although most patients have a positive attitude towards empirically supported trauma-focused treatments,\textsuperscript{71} dissemination of these treatments is extremely difficult.\textsuperscript{52,63,67} Factors related to therapists are an important cause of the under-utilization of trauma-focused treatments,\textsuperscript{15,72} especially when it concerns patients with a psychotic disorder.\textsuperscript{14-17} In our opinion, reducing this under-utilization of trauma-focused treatment in psychosis requires a broad nation-wide intervention programme based on two pillars: 1) creating awareness among all clinicians, and also training clinicians how to assess and discuss both trauma and PTSD; and 2) training therapists in the treatment of trauma and PTSD for patients with psychosis, by means of empirically supported trauma-focused treatments.

Two main target groups are identified, i.e. professionals working primarily with psychosis, and professionals working primarily with PTSD. Those working with PTSD should be informed about the high prevalence of psychotic experiences in patients with PTSD,\textsuperscript{46,73-75} and that standard trauma-focused treatments appear to be effective for this subgroup. On the other hand, professionals that primarily work with patients with psychotic disorders (e.g. experts by experience, nurses, social workers, psychiatrists, psychologists) should be informed about the high prevalence of trauma in individuals with a psychotic disorder,\textsuperscript{55,76} that there are indications for causality in the association between trauma and psychosis,\textsuperscript{77,78} and that both trauma and PTSD are associated with more severe and persistent symptoms, worse functioning and reduced quality of life.\textsuperscript{58,59} These clinicians could be trained in: a) adequately inquiring about and responding to traumatic experiences; b) how to screen for PTSD with tools that have been validated for this patient group;\textsuperscript{55} and c) what to do with this information. If clinicians feel confident that they can discuss trauma, screen for PTSD, and have clear guidelines regarding how to follow-up on this, they will (hopefully) be more inclined to deal with the trauma and PTSD symptoms in the lives of their patients. A small pilot study tested a half-day training and found that it effectively influenced clinicians’ beliefs, but not actual clinical behaviour.\textsuperscript{79} We developed a one-day training that includes all the above-mentioned topics, and also added several reminders in the consecutive weeks after the training, partly based on our findings that training alone is not enough to change therapists’ attitudes (CHAPTER 7). We are currently conducting a pilot study (n = 67) to test its
effects on clinicians’ beliefs and actual clinical behaviour (e.g. whether the training results in an increase in treatment plans that include information about traumatic experiences and their influence on the symptoms of the patient). For dissemination purposes, we have also developed a website on which we share information about trauma, psychosis, PTSD and trauma-focused treatment (www.traumaenpsychose.nl). Other influential national/international websites have also started to deal with this topic. In clinical practice we have noticed that patients (and the persons close to them) are starting to ask for trauma-focused treatment after browsing the internet. The fact that mental healthcare is slowly moving away from the focus on merely classifying DSM disorders to a more individualised approach,80,81 may function as a wakeup call for clinicians to be aware that it is essential to make a thorough assessment of early life experiences in all patients with a psychotic disorder.

Considering the high rates of comorbidity, interaction and overlap between PTSD and psychosis, therapists working with psychosis could be trained in trauma-focused treatment, and therapists working with PTSD could be trained in the delivery of psychological interventions for psychosis. In our opinion, it would be effective to base these training programmes on interventions with the greatest empirical evidence (i.e. trauma-focused treatments for PTSD and CBT for psychosis), and should emphasise that psychosis is not an exclusion criterion for trauma-focused treatment and vice versa. To ensure that therapists actually use trauma-focused treatments in the presence of psychotic symptoms, training programmes could be designed such that they challenge negative clinicians’ beliefs concerning trauma-focused treatment in general and, specifically, in patients with psychotic disorders. Ongoing consultation after training appears to be an essential element in reducing therapists’ burden and harm expectancies. In a review of strategies to modify clinicians’ beliefs about exposure, Farrell and colleagues (2013) conclude that training should include active simulation of exposure in role play; presenting data that shows safety, tolerability and ethicality of the treatment; and presenting information that has an emotion-based appeal (e.g. case examples). Other authors have arrived at similar conclusions.82 Both a recent naturalistic study83 and a recent feasibility study (CHAPTER 7) with training programmes that included the above-mentioned elements, and also included workshops and ongoing clinical consultation, were indeed found to increase credibility and self-efficacy, and to reduce burden and harm expectancies. Moreover, these effects were sustained on the long term (CHAPTER 7), and therapist-rated credibility of trauma-focused treatment was found to be associated with the actual usage of it.84 Although more research on these topics is needed, it is promising to see that these hypotheses have been confirmed.
Finally, we believe that policymakers and mental healthcare managers should support this ongoing development. Mental healthcare teams that provide care to patients with psychosis should invest in training and ensure that they have sufficient therapists that are trained in both CBTp and trauma-focused treatment. Although this may involve increased costs on the short term, this may well prove to be highly cost-effective on the long term. With the aim to inspire both policymakers and clinicians, we asked Bas Labruyere (a Dutch filmmaker with personal relevant experience: www.verlorenjaren.nl) to make a mini-documentary. This documentary *Trauma & Psychosis* can be viewed online with English subtitles via www.traumaenpsychose.nl. In this mini-documentary four participants from our own study relate 1) their personal story of how trauma and PTSD symptoms have influenced their life, 2) their experiences with mental healthcare professionals when trying to talk about their traumas, 3) their thwarted wish to emotionally process their traumas, and 4) how trauma-focused treatment played a crucial role in their recovery process.

**FUTURE RESEARCH: THE GREAT BEYOND**

*Trauma-focused treatment in context*

Although we found promising effects of trauma-focused treatment on PTSD in psychosis, there is always room for further improvement. In this severely traumatised patient group, future studies should increase the maximum number of treatment sessions up to 12 or even 16 sessions. For many participants in our trial, treatment consisting of 8 sessions may not have been sufficient. However, we believe that it is wise to set a maximum amount of sessions, because we observed that this reinforces both therapist and patient to maintain a clear focus, and not to divert from the treatment goals (i.e. reduce therapist drift).85

The data currently available suggest that effectively treating PTSD may be a sensible first intervention, because reducing re-experiencing symptoms, avoidance behaviours, and symptoms of arousal positively influence other symptoms.20-22 Many patients with psychosis suffer from long-standing complex symptom profiles and are severely restricted in their social functioning. In these patients with severe symptoms and considerable comorbidity, treating PTSD will not be sufficient to induce full recovery from psychopathology. In patients with psychotic disorders, we advocate conceptualizing and performing trauma-focused treatment within a broader assessment
of psychopathology. Trauma-focused treatment can be preceded and/or followed-up by other evidence-based (often cognitive behavioural) interventions, such as CBTp. Although there is a paucity of research on this topic, we believe it is important to be attentive to the effects of childhood trauma beyond PTSD, and on integrating these experiences and their consequences in the personal narrative.

In our trial, trauma-focused treatment did not result in significant improvements in social functioning on the Personal and Social Performance Scale. Future studies should compare trauma-focused treatment alone with trauma-focused treatment plus a follow-up intervention aimed at integrating the traumatic experiences and actively stimulating the first steps in the recovery of social functioning. These studies may also adopt longer follow-up assessments, because recovery of social functioning in patients with long-term and severe psychosis may need a considerable amount of time. These studies may also use more sensitive measures of social functioning, e.g. experience sampling methodology, and include a test of the long-term cost-effectiveness of treating PTSD in psychosis.

Studies are also needed that test the effects of research assistants who administer a very extensive trauma interview and who validate the patient’s traumatic experiences. Other studies may compare PE or EMDR to an active control condition, e.g. supportive counselling, to adjust for factors such as recognition, hope, support, and other ‘non-specific’ factors. There is a need for a head-to-head comparison between treatments with and without direct trauma memory exposure. A dismantling study comparing cognitive restructuring only6 with standard PE, and a CBT program that combines the two, may shed more light on the essential elements of trauma-focused treatment in psychosis.

A 21-year waiting list
In our trial, the participants had been suffering from PTSD for (on average) 21.0 years and had been suffering from psychosis for 17.7 years. Twenty-one years is a long time to wait for adequate treatment of PTSD, especially as we know that comorbid PTSD is associated with more severe psychopathology and lower levels of social functioning. First, there is a need to greatly reduce this duration of untreated PTSD in patients with a psychotic disorder; this is one of the main reasons why it is important to invest in the dissemination of trauma-focused treatment in psychosis. Second, the recent decade has shown that we can effectively prevent the development of a psychotic disorder by providing a preventative CBT to individuals at ultra-high risk (UHR) for psychosis. In individuals that meet the criteria for UHR, childhood trauma is highly prevalent, and may or may not be associated with the chance of transition to psychosis. Moreover,
a national study of the Danish population shows that the risk of developing psychosis is extremely high in the first years after developing PTSD. Therefore, it is sensible to treat PTSD as quickly as possible when it occurs. Future studies should examine the effects of trauma-focused treatment in individuals with UHR that also experience PTSD symptoms. These studies could also test whether this has an impact on (attenuated) the psychotic symptoms and the chance of transition to psychosis.

**New targets for trauma-focused treatments**

Our findings may also stimulate the development of new treatments, e.g. targeting trauma-related psychotic symptoms with trauma-focused treatments. Trauma increases the chance of developing psychosis, and there may or may not be selective associations between specific traumas and specific symptoms of psychosis. These interactions may be either direct (temporal, content) or indirect (thematic, schema, basic beliefs about the self, others and the world). Ways to conceptualise trauma-focused interventions aimed at reducing symptoms of psychosis have been proposed, e.g. and, currently, several pilot studies are testing the efficacy of this approach.

**Modular CBT**

Although individuals are naturally resilient, experiencing childhood trauma can negatively impact a person's life and induce experiences we may refer to as 'symptoms' or 'psychopathology'. Some people suffer from involuntary memories of their negative experiences, whereas others become anxious and suspicious of other people. Some develop very negative beliefs about themselves, and others start hearing voices. People may become very sensitive to stress and some may get depressed and become demoralised. Many individuals develop a combination of these kind of experiences. Childhood traumatization appears to be a 'pluripotent risk factor' that is associated with increased risk for psychopathology cutting across traditional DSM boundaries, e.g. Prevention, or a significant reduction of childhood trauma, would drastically reduce the prevalence of psychopathology. These direct and indirect associations between adverse life events and experiences in the present can sometimes be influenced by trauma-focused treatments. Generally, because trauma is such an important factor in developing psychopathology, clinicians may have to start asking their patients and themselves: "What happened to you? And how does this still affect you at the moment?" In our opinion, therapists should support their patients in the exploration of these interactions and be trained in collaboratively developing case formulations that include both negative and positive life experiences. In close collaboration with the patient and his/her loved ones, therapists can be taught to develop a tailored treatment programme.
and, within that treatment programme, apply evidence-based interventions where available.

This personalised formulation-driven approach, that includes a thorough assessment of the history of the patient, may be combined with several other developments in mental healthcare, i.e. network theory of psychopathology,23,24 ecologically valid (personalised) diagnosing with 'experience sampling methodology',88 and short 4-8 session modular CBT interventions that were found to be effective, e.g. for worry,108 insomnia,109 or low self-esteem.110-112 Thus: an individualised, formulation-driven, modular approach based on a network model and with ecologically valid active daily life monitoring and intervention. Considering that trauma is one of the major causes of psychopathology97,106,107 and that even small dosages of trauma-focused treatment (e.g. 8 sessions) induce marked beneficial effects, trauma-focused treatment may well be an important module in many of these modular CBT treatments; particularly because PTSD symptoms may play a dominant role in the psychopathology network and that treating PTSD positively influences other psychopathology.20-22

CONCLUSION

Although more research is required on the effectiveness of trauma-focused treatments in psychosis, a priori exclusion of individuals with psychotic disorders from standard evidence-based PTSD treatments does not seem justified. Trauma-focused treatment with direct exposure to trauma memories appears to be both effective and safe. Trauma-focused treatment did not induce adversities and symptom exacerbation, and positively influenced other symptoms such as paranoid ideation. Baseline psychosis-specific factors do not appear to predict trauma-focused treatment outcome and dropout in psychosis and, therefore, should not be used as exclusion criteria for trauma-focused treatment. Therapists can be trained quickly and effectively in the delivery of trauma-focused treatment in psychosis. Although replication of the findings presented in this thesis is required, these results may serve to inform guidelines and clinical decision-making.
REFERENCES


