Treating Psychotic Symptoms using Trauma-Focused Psychological Therapies: Opportunities and Challenges

Dr Rachel Brand
The Voices Clinic
Centre for Mental Health
Swinburne University of Technology
The Voices Clinic is a specialist psychology treatment and research clinic for people who hear voices or have similar experiences.

Based at Swinburne University, Melbourne Australia
Angela was a 25 year old woman with a diagnosis of schizophrenia. She frequently heard voices (auditory hallucinations) that were frequent, critical, threatening, and commanding.

“You’re disgusting”
“You’re filth”
“Keep your mouth shut”
“I can have you killed”

She was terrified, depressed, and hopeless
Are some voices a type of trauma memory intrusion, similar to those experienced in PTSD?

Can we use the effective psychological treatments we have for PTSD to treat some voices?
Are some voices a type of trauma memory intrusion, similar to those experienced in PTSD?
Traumatic and adverse experiences are common in people with psychotic disorders.

85% of those with schizophrenia spectrum disorders reported childhood trauma.
There is mounting evidence that traumatic life events play a causal role in psychotic experiences.

- Strength and consistency of association
  - Varese et al., 2012

- Dose-response effect
  - Shevlin et al., 2008

- Temporal ordering and reversal of effect
  - Kelleher et al., 2013
Several ‘families’ of posttraumatic psychological processes are implicated in the link between trauma and psychosis.

- **Posttraumatic sequelae**
  - Dissociation
  - PTSD symptoms

- **Affective dysfunction/dysregulation**
  - Attachment
  - Depression and anxiety
  - Emotion dysregulation

- **Cognitive factors**
  - Self esteem
  - Self concept clarity
  - Social defeat
  - Negative schema

Williams et al., 2018
Are some voices a type of trauma memory intrusion?

- Phenomenological similarities between voices and trauma memory intrusions

- Voice content has direct or thematic links to trauma for about 50% (Hardy et. al, 2005)

- Trauma memory intrusions mediate the link between trauma and voices (Peach et al., 2018)
Key theoretical models

• Shifts in information processing during traumatic events leads to vivid, fragmented, predominantly perceptual, and decontextualised memories

• This process is more severe in people with psychosis (difficulties in spatial and temporal integration)

• Trauma memory intrusions occur without autonoetic recollection, so are experienced as voices

Hardy, 2017; Steel et al., 2005
The moment-to-moment association between posttraumatic stress symptoms and voices in the flow of daily life: An ecological momentary assessment study.

28 people (18-75 yrs) with frequent and persistent voices and a history of traumatic events.

6 days of EMA

- MovisensXS app
- Training in use of app
- 10 ax per day, pseudo-random between 10am and 8pm
1. **Just before the beep went off** I was hearing voices (that other people cannot hear)

Thinking about the traumatic or stressful event(s) we identified as related to your voices...

2. **Since the last beep**, memories of the event(s) came into my head when I did not want them to.

3. **Since the last beep** I have tried hard to avoid thinking about or being reminded of the event(s).

4. **Since the last beep** I have been constantly alert, on edge, irritable, or jumpy.
Our findings...

- EMA data collected at 1680 time points, completed at 1190 (29.17% missing)

- **Trauma memory intrusions within the same hour were a significant predictor of voices.** A one point increase in trauma memory intrusions increased likelihood of voices by 43%.

- Avoidance and hyperarousal within the same hour were not significant predictors.

- No significant predictors of voices when looking at the previous timepoint (60-120 minutes prior)
Are trauma memory intrusions more relevant for some people than others?

Those with a direct voice-trauma content link had a significantly stronger relationship between trauma memory intrusions and voices.
Trauma memory intrusions play a momentary role in some voices (perhaps particularly those that have a direct content link with traumatic events)
Can we use the effective psychological treatments we have for PTSD to treat some voices?
Trauma-focused therapies

E.g. Prolonged exposure, EMDR, trauma-focused CBT. All share common components and aims:

- Psychoeducation
- Coping skills and emotion regulation strategies
- Imaginal exposure
- Cognitive restructuring/meaning making
- A focus on memory processes – creation of a coherent trauma narrative and reorganisation of memory functions
A meta-analysis of the secondary effects of trauma-focused therapies for PTSD on symptoms of psychosis

• There is now a growing evidence base for the use of trauma-focused therapies (PE, EMDR, TF-CBT) for treating PTSD in people with psychosis.

• But, there had not been any synthesis of the impact of these therapies on psychotic symptoms

• This provided an opportunity to get an initial idea of the potential of trauma-focused therapies as a treatment for psychotic symptoms
<table>
<thead>
<tr>
<th><strong>Population</strong></th>
<th>Diagnosis of a psychotic disorder or the presence of psychotic symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention</strong></td>
<td>Trauma-focused treatments with an evidence base for PTSD (EMDR, prolonged exposure, TF-CT, TF-CBT, CPT)</td>
</tr>
<tr>
<td><strong>Comparison</strong></td>
<td>Controlled or uncontrolled studies</td>
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</table>
| **Outcomes** | **Primary:** Positive symptoms, negative symptoms, hallucinations, delusions  
**Secondary:** PTSD, depression, anxiety |
• Small, significant effect on aggregate positive symptoms at post-treatment, but not significant at follow-up
• Small, significant effect on delusions at follow-up
• No significant effect on negative symptoms or voices
• Effects of PTSD only significant at follow-up and of a small magnitude
There is a need for treatment trials that target traumatic memories that may be specifically related to psychotic symptoms.

- Some promising effects of TF-treatments on positive symptoms of psychosis (but not maintained at follow-up) and on delusions specifically.

- Studies predominantly aimed at treating PTSD, meaning that TF work was focused on index traumas for PTSD.

- Only two studies with data available for voices.
Do trauma-focussed psychological interventions have an effect on psychotic symptoms? A systematic review and meta-analysis

Rachel M. Brand a,b, Carla McEnery a, Susan Rossell a,b, Sarah Bendel c,d, Neil Thomas a,b

a Centre for Mental Health, Swinburne University, PO Box 218, Hawthorn, VIC 3122, Australia
b The Voices Clinic, Monash Alfred Psychiatry Research Centre, Alfred Hospital, Monash University Central Clinical School, Melbourne, VIC 3004, Australia
c Centre for Mental Health, The University of Melbourne, PO Box 410, Parkville, VIC 3052, Australia
d The Centre for Youth Mental Health, The University of Melbourne, VIC 3010, Australia

ABSTRACT

There is growing recognition of the relationship between trauma, posttraumatic stress disorder (PTSD) and psychosis. There may be overlaps in causal mechanisms involved in the development of PTSD and psychosis following traumatic or adverse events. Trauma-focussed treatments found to be effective in treating PTSD may therefore assist in the psychological treatment of psychosis. This systematic review examined the literature on trauma-focussed treatments conducted with people with schizophrenia spectrum or psychotic disorders to determine the effects on psychotic symptoms. Secondary outcomes were symptoms of PTSD, depression and anxiety. Twenty-five studies were included in the review, with 12 being included in the meta-analysis. Trauma-focussed treatments had a small, significant effect (g = 0.31, CI [0.55, 0.08]) on positive symptoms immediately post-treatment, but the significance and magnitude of this effect was not maintained at follow-up (g = −0.18, CI [−0.45, −0.06]). Trauma-focussed treatments also had a small effect on delusions at both post-treatment (g = 0.37, CI [0.87, −0.12]) and follow-up (g = 0.38, CI [0.87, 0.10]), but this only reached significance at follow-up. Effects on hallucinations and negative symptoms were small and non-significant. Effects on PTSD symptoms were also small (post-treatment g = 0.21, CI [0.70, −0.27], follow-up g = 0.31, CI [0.02, 0.00]) and only met significance at follow-up. No significant effects were found on symptoms of depression and anxiety. Results show promising effects of trauma-focussed treatments for the positive symptoms of psychosis, however further studies developing and evaluating trauma-focussed treatments for trauma-related psychotic symptoms are needed.
The Recall Study

- To assess the feasibility, acceptability and potential effects of trauma-focused imaginal exposure for trauma-related voices.

- An initial exploration of mechanisms of change; trauma-memory intrusions, the nature of the trauma memory, and posttraumatic cognitions
The Recall study

- A single arm proof of concept case series (n=15) of a 6-session imaginal exposure intervention.

- Participants had: frequent and persistent voices, a history of traumatic events, made some links between trauma and voices, and were interested in a TF therapy.

Assessments:
Baseline, post treatment and 1-month follow-up

Feasibility /acceptability
- Uptake
- Retention
- CSQ

Effectiveness
- PSYRATS-AHS

Mechanisms of change
- CAPS-5
- TMQ
- PTCI

- Frequency and distress (0-10) for voices and trauma memory intrusions rated each session
Imaginal Exposure

- 6 weekly 90-minute sessions
- Based on imaginal exposure in Foa’s PE manual.
- First session included exploration of trauma-voice links.
- Memories targeted were those recognised as having a link with voices.
Results: Feasibility/ Acceptability

- Low referral rates into the study
- Low uptake from those screened (42% of those screened did not want to do the therapy when it was explained to them)

Retention in the therapy:

15 enrolled
14 began therapy
11 completed therapy
12 completed all assessments

Did not attend first session and lost contact
Ceased therapy due to distress and symptom exacerbation
Ceased therapy due to mental health inpatient admission (not deemed related to the study)
Results: Satisfaction and distress

In an overall, general sense, how satisfied are you with the treatment you have received?

- Mostly satisfied
- Very satisfied

How satisfied are you with the amount of help you have received?

- Mostly satisfied
- Very satisfied

Did you experience distress during your treatment sessions?

- Severe distress that I did not feel able to manage
- Moderate distress that I felt able to manage
- Mild distress that did not bother me

- Voices are worse
- Voices are no different
- Voices are better
- Voices are much better
- Missing
**Results: Effectiveness and mechanisms of change**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Baseline M</th>
<th>Baseline SD</th>
<th>Post M</th>
<th>Post SD</th>
<th>Follow-up M</th>
<th>Follow-up SD</th>
<th>Mean difference baseline-post (95% CI)</th>
<th>Mean difference baseline-follow-up (95% CI)</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYRATS-AHS</td>
<td>29.58</td>
<td>7.96</td>
<td>26.08</td>
<td>11.04</td>
<td>21.08</td>
<td>12.94</td>
<td>-3.50 (-10.59, 3.59)</td>
<td>-8.50 (-17.31, 0.31)</td>
<td>0.99</td>
</tr>
<tr>
<td>CAPS-5</td>
<td>26.75</td>
<td>14.89</td>
<td>15.17</td>
<td>11.38</td>
<td>11.92</td>
<td>10.54</td>
<td>-11.58 (-22.20, -0.96)</td>
<td>-14.83 (-25.97, -3.70)</td>
<td>0.93</td>
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<tr>
<td>TMQ intrusiveness</td>
<td>2.48</td>
<td>1.04</td>
<td>1.66</td>
<td>1.15</td>
<td>1.29</td>
<td>0.92</td>
<td>-0.82 (-1.47, -0.18)</td>
<td>-1.19 (-1.78, -0.59)</td>
<td>1.06</td>
</tr>
<tr>
<td>TMQ disorganisation</td>
<td>1.32</td>
<td>1.12</td>
<td>1.42</td>
<td>1.08</td>
<td>1.40</td>
<td>1.29</td>
<td>0.10 (-1.01, 0.81)</td>
<td>0.08 (-1.11, 0.94)</td>
<td>0.07</td>
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<tr>
<td>PTCI</td>
<td>136.33</td>
<td>36.20</td>
<td>114.75</td>
<td>45.72</td>
<td>107.83</td>
<td>50.89</td>
<td>-21.58 (-43.79, 0.62)</td>
<td>-28.50 (-54.87, -2.13)</td>
<td>0.73</td>
</tr>
</tbody>
</table>
Results: Mean session-by-session scores
• Brief imaginal exposure generally acceptable, but distress and temporary symptom exacerbation common and unacceptable for some.

• Low referral and uptake suggest feasibility issues in use of standalone, brief trauma-focused exposure intervention.

• Potentially large effects on voices, but individual response highly variable.

• Therapy did reduce PTSD symptoms and intrusiveness of trauma memory.
Where are we now?

• Trauma memory intrusions may play a role in some people’s voices (particularly those who show direct content links)

• Trauma-focused therapies show promise in treating trauma-related psychotic symptoms
Important questions.. and some initial thoughts

• What influences the acceptability and tolerability of trauma-focused therapies for psychotic experiences?
• Who is most likely to benefit?

✓ Direct content link between voices and trauma
✓ Comorbid intrusions
✓ Subjective sense of safety
X Persecutory understanding of voices
X Not in a position to tolerate symptom exacerbation

• Is imaginal exposure the best treatment (Imagery rescripting – Paulik et al. 2019; phase-based TF-CBTp approach Keen et al., 2017)
A tale of two outcomes: Remission and exacerbation in the use of trauma-focused imaginal exposure for trauma-related voice-hearing. Key learnings to guide future practice

Rachel M. Brand, Amy Hardy, Sarah Bendall, Neil Thomas


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Abstract

Objective

Many people who hear voices (also termed auditory-verbal hallucinations) have experienced traumatic or adverse life events. There is growing evidence that, for a number of people, these events are an important contributing factor to voice-hearing experiences. Psychological mechanisms implicated in the trauma-voice-hearing relationship align with those involved in posttraumatic stress disorder, giving a strong
Contributors

Dr Sarah Bendall
Orygen: The National Centre of Excellence in Youth Mental Health

Dr Amy Hardy
Institute of Psychiatry, Psychology & Neuroscience, King’s College London

Prof Susan Rossell
Centre for Mental Health Swinburne University of Technology

A/Prof Neil Thomas
Centre for Mental Health Swinburne University of Technology
Thank you for listening.

Email: rbrand@swin.edu.au
@rachelmbrand
### Table 2. Participant demographics ($n = 15$)

<table>
<thead>
<tr>
<th>Category</th>
<th>Value (n, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, m (SD)</strong></td>
<td>43.79 (8.64)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>9 (60.00)</td>
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<tr>
<td>Male</td>
<td>5 (33.34)</td>
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<tr>
<td>Other</td>
<td>1 (6.67)</td>
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<tr>
<td><strong>Ethnicity</strong></td>
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<td>Caucasian</td>
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<td>Hispanic</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Highest level of education</strong></td>
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<tr>
<td>Primary</td>
<td>1 (6.67)</td>
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<tr>
<td>Secondary</td>
<td>2 (13.33)</td>
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<tr>
<td>Tertiary</td>
<td>12 (80.00)</td>
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<td><strong>Index traumatic event type</strong></td>
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<tr>
<td>Childhood sexual abuse</td>
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<tr>
<td>Childhood physical abuse</td>
<td>2 (13.34)</td>
</tr>
<tr>
<td>Childhood emotional abuse</td>
<td>4 (26.67)</td>
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<tr>
<td>Adulthood sexual abuse</td>
<td>5 (33.33)</td>
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<tr>
<td>Bullying</td>
<td>1 (6.67)</td>
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<td>Workplace accident</td>
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<tr>
<td>Witnessing death of family member</td>
<td>1 (6.67)</td>
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<tr>
<td>Military trauma</td>
<td>1 (6.67)</td>
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<tr>
<td><strong>Content link between AH and index trauma</strong></td>
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<tr>
<td>Direct and thematic</td>
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<tr>
<td>Thematic</td>
<td>7 (46.67)</td>
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<tr>
<td>No link</td>
<td>5 (33.33)</td>
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<td><strong>Primary diagnosis (MINI 7.02)</strong></td>
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<tr>
<td>Schizophrenia spectrum disorder</td>
<td>10 (66.67)</td>
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<tr>
<td>Mood disorder with psychotic features</td>
<td>4 (26.67)</td>
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<td>Borderline personality disorder</td>
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<td><strong>Comorbid PTSD (CAPS 5)</strong></td>
<td>6 (40.00)</td>
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<tr>
<td>Comorbid BPD (SCID 5)</td>
<td>3 (20.00)</td>
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<tr>
<td><strong>Number of years had AH, m (SD)</strong></td>
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<td><strong>Taking anti-psychotic medication</strong></td>
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<td>Yes</td>
<td>11 (73.00)</td>
</tr>
<tr>
<td>No</td>
<td>3 (20.00)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (6.67)</td>
</tr>
</tbody>
</table>