Childhood trauma and hallucinations in bipolar affective disorder: preliminary investigation

PAUL HAMMERSLEY, ANTON DIAS, GILLIAN TODD, KIM BOWEN-JONES, BERNADETTE REILLY and RICHARD P. BENTALL

**Background** Strong evidence exists for an association between childhood trauma, particularly childhood sexual abuse, and hallucinations in schizophrenia. Hallucinations are also well-documented symptoms in people with bipolar affective disorder.

**Aims** To investigate the relationship between childhood sexual abuse and other childhood traumas and hallucinations in people with bipolar affective disorder.

**Method** A sample of 96 participants was drawn from the Medical Research Council multi-centre trial of cognitive–behavioural therapy for bipolar affective disorder. The trial therapists recorded spontaneous reports of childhood sexual abuse made during the course of therapy. Symptom data were collected by trained research assistants masked to the hypothesis.

**Results** A significant association was found between those reporting general trauma (n=38) and auditory hallucinations. A highly significant association was found between those reporting childhood sexual abuse (n=15) and auditory hallucinations.

**Conclusions** The relationship between childhood sexual abuse and hallucinations in bipolar disorder warrants further investigation.

**Declaration of interest** None.

Research has shown high levels of childhood sexual abuse and other early traumas in patients with serious mental illness (Goodman et al, 1997; Mueser et al, 1998). There is evidence of a specific association between childhood sexual abuse and positive symptoms, particularly hallucinations, in patient samples (Ross et al, 1994; Read & Argyle, 1999), community samples (Ross & Joshi, 1992) and also in surveys of schizotypal traits in ordinary people (Startup, 1999).

Goodwin & Jamison (1990) reviewed 20 studies conducted between 1922 and 1989 investigating the prevalence of hallucinations in bipolar disorder and calculated a weighted mean average of 18%. To date, no study has attempted a systematic analysis of the relationship between childhood sexual abuse or other childhood trauma and hallucinations in people with bipolar disorder. In this study we investigated this relationship in a sample of patients recruited to a multi-centre, randomised, controlled trial of cognitive–behavioural therapy.
traumas commonly experienced by those with serious mental illness, which were in turn derived from the Trauma History Questionnaire (Green, 1996). For each category, the therapists were asked to record detailed descriptions of the traumatic event where possible.

A report of any trauma including childhood sexual abuse was only classified as occurring in childhood if it occurred before the patient’s 16th birthday. The behavioural descriptions of childhood sexual abuse were categorised according to the criteria used in the Child Maltreatment History Self-Report (CMHSR; Badgley et al., 1984), an assessment tool used in a large-scale Canadian study of childhood sexual abuse in the general population. Sexual abuse is rated in the CMHSR according to four distinct categories:

(a) child exposed to on more than one occasion;
(b) child threatened with sexual contact;
(c) child touched sexually;
(d) sexual assault (attempted or actual).

In our sample no participants reported threatened sexual contact only, and in no case did the recorded onset of illness predate the reported abuse. In order to ensure that the trauma descriptions were categorised correctly, a psychiatric social worker with extensive experience in the assessment of trauma and abuse (A.D.) reclassified the detailed descriptions. Interrater reliability, indicating consensus for allocation into designated categories, was 34/36 for recorded reports of general trauma and 15/15 for reports of childhood sexual abuse.

Data for lifetime history of experience of psychotic symptoms were collected by the four trained and supervised research assistants at the trial baseline assessment, using the lifetime version of the SCID. This provided evidence for the presence or absence of hallucinations in six distinct categories. Only participants scoring 3 (threshold or true hallucinations) on the baseline SCID were categorised as having a history of hallucinations; this was to ensure that transient stress-related dissociative symptoms or quasi-psychotic experiences of the type that may be present in borderline personality disorder were not classified as hallucinations. To minimise the risk of type-I statistical errors, and in accordance with our hypotheses, our main analyses focused on hallucinations.

However, to determine whether any findings were specific to hallucinations, parallel analyses were calculated using SCID data on patients’ delusions and hallucinations in the non-auditory modalities.

**RESULTS**

Forty-five participants (nearly half of the sample) had experienced hallucinations during their lifetime: 30 had experienced auditory hallucinations, 11 had heard voices commenting on their actions, 25 had experienced visual hallucinations, and 9 had experienced other (tactile, somatic or olfactory) hallucinations. The numbers of participants divulging particular types of trauma, classified according to the Trauma History Questionnaire categories, are given in Table 1. Fifteen of the 96 participants disclosed some kind of childhood sexual abuse to their therapists. No significant difference between the sexually traumatised and non-traumatised groups was observed for the mean age at illness onset (traumatised group 22.2 years, non-traumatised group 24.8 years; t=1.14, p=0.26, d.f.=93), or age at first hospitalisation (traumatised group 28.1 years, non-traumatised group 29.6; t=0.34, p=0.59, d.f.=79). As both the trauma reports and the SCID yielded categorical data, associations between trauma and hallucinations were analysed using the chi-squared statistic.

Contingency tables showing the relationships between different kinds of hallucination report and reports of childhood sexual abuse are shown in Table 2. A significant association was found between reports of any trauma and the presence or absence of auditory hallucinations ($\chi^2=7.61$, p<0.01, d.f.=1). The observed associations between reports of abuse and history of any hallucinations ($\chi^2=6.83$, p<0.005, d.f.=1), history of auditory hallucinations ($\chi^2=14.66$, p<0.001, d.f.=1), and history of voices commenting

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**Table 1** Type of trauma spontaneously reported by patients with bipolar disorder (n=96) to their therapists

<table>
<thead>
<tr>
<th>Trauma</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any trauma</td>
<td>38</td>
<td>39.6</td>
</tr>
<tr>
<td>Childhood sexual abuse</td>
<td>15</td>
<td>15.8</td>
</tr>
<tr>
<td>Assault</td>
<td>19</td>
<td>19.8</td>
</tr>
<tr>
<td>Assault with a weapon</td>
<td>3</td>
<td>3.1</td>
</tr>
<tr>
<td>Witness to the death or injury</td>
<td>13</td>
<td>13.5</td>
</tr>
<tr>
<td>Murder of close friend or family</td>
<td>2</td>
<td>2.1</td>
</tr>
<tr>
<td>Serious accident</td>
<td>4</td>
<td>4.2</td>
</tr>
<tr>
<td>Unspecified/other</td>
<td>8</td>
<td>8.3</td>
</tr>
</tbody>
</table>

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**Table 2** Contingency table showing associations between lifetime history of different types of hallucination and reports of childhood sexual abuse in the sample of patients with bipolar disorder (n=96)

<table>
<thead>
<tr>
<th>Hallucinations</th>
<th>Absent</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>(%)</td>
</tr>
<tr>
<td>Any hallucinations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood sexual abuse reported</td>
<td>3</td>
<td>(20.0)</td>
</tr>
<tr>
<td>Childhood sexual abuse not reported</td>
<td>48</td>
<td>(59.3)</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>(63.1)</td>
</tr>
<tr>
<td>Auditory hallucinations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood sexual abuse reported</td>
<td>4</td>
<td>(26.7)</td>
</tr>
<tr>
<td>Childhood sexual abuse not reported</td>
<td>62</td>
<td>(76.5)</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>(68.8)</td>
</tr>
<tr>
<td>Voices commenting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood sexual abuse reported</td>
<td>9</td>
<td>(60)</td>
</tr>
<tr>
<td>Childhood sexual abuse not reported</td>
<td>76</td>
<td>(93.8)</td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>(88.5)</td>
</tr>
</tbody>
</table>

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and later trauma such as exposure to military combat (Butler et al., 1996).

In a community survey, Ross & Joshi (1992) reported that 46% of those who reported three or more Schneiderian symptoms had experienced childhood physical or sexual abuse, compared with 8% with no such symptoms. In surveys of schizotypal traits in the normal population it has also been found that reports of unusual experiences correlate with a reported history of childhood sexual abuse (Breyer et al., 1987; Startup, 1999) or childhood maltreatment (Berenbaum, 1999).

Given this apparent association between hallucinatory experiences and childhood sexual abuse in people with schizophrenia, it is obviously important to establish whether the same relationship exists between hallucinations and child-
hood sexual abuse in other clinical groups.

Findings of this study

Over a quarter of the participants in our study reported visual hallucinations, a proportion that is higher than in most previously reported studies of people with bipolar disorder (Goodwin & Jamison, 1990). However, in one of the largest studies of this kind (Black & Nazzallah, 1989), the observed prevalence rate for visual hallucinations was 27%, which is almost identical to our own figure. In contrast to most previous studies, the figures arrived at in our investigation were based on lifetime experiences rather than on current symptoms.

Only 15 (16%) of our patients reported a history of childhood sexual abuse to their therapists. This finding is comparable with those obtained from population samples. For example, Salters (1988) summarised 14 North American studies investigating childhood sexual abuse in the general population, and reported prevalence rates ranging from 11% to 38% for women. Despite this modest prevalence of reported abuse in our sample, strong associations were observed between reported childhood sexual abuse and a history of hallucinations, especially auditory ones.

Possible mechanisms linking early trauma to hallucinations

The processes by which trauma leads to hallucinations in people with severe mental illness are not understood. However, psychological studies have suggested that hallucinations result from the misattribution of mental events to an alien or external source, and that this is most likely to occur when experiencing mental events that are automatic and low in cognitive effort (Bentall, 2000). As intrusive memories of trauma are typically mental events of this kind, they may be particularly likely to be experienced as hallucinations by

(χ²=14.28, P<0.002, d.f.=1) were even more significant. However, no significant association was found between trauma and reports of delusions, or trauma and reports of visual or tactile hallucinations. The relationship between mood-incongruent psychotic symptoms and childhood sexual abuse was not significant. Seven patients were diagnosed as having borderline personality disorder. However, the observed associations between childhood sexual abuse and hallucinations all remained when these patients were excluded from the analyses.

DISCUSSION

Previous studies of CSA and psychosis

Many studies have found that high levels of early trauma are reported by adult psychiatric patients. In a review of 13 studies considered to be methodologically adequate at the time, Goodman et al (1997) found that women undergoing treatment for psychosis consistently reported much higher levels of abuse than did controls. In a study of their own conducted later (Mueser et al., 1998) these researchers estimated that 52% of 153 severely ill women patients they surveyed had experienced sexual abuse during childhood, and nearly 64% had suffered sexual abuse in later life. These figures indicate that many women with psychosis have experienced multiple episodes of abuse. Goodman et al. (1999) also reported that, in a further sample of 50 patients with serious mental illness (64% schizophrenia), three-quarters of the women and nearly half of the men had experienced childhood sexual abuse. Similar findings were reported in a more recent survey of first-episode patients (Neria et al., 2002). In the same study, it was reported that only 5% of reports of early trauma could be attributed to aberrant behaviour of the patient (for example, placing themselves in high-risk situations).

Experience of early trauma has been specifically associated with Schneiderian symptoms (Ross et al., 1994; Ellason & Ross, 1997) or hallucinations (Reid & Argyle, 1999). Other studies have reported that psychotic symptoms, especially hallucinations, are frequently experienced by survivors of early trauma such as sexual abuse (Heins et al., 1990; Ensink, 1993)
individuals whose source-monitoring abilities are compromised by severe mental illness. Negative automatic thoughts of the kind experienced during periods of low self-esteem would also be likely to be experienced as alien under these circumstances. Both types of cognitive events are especially likely to be experienced during stressful periods, especially after an adult survivor of abuse has been further traumatised by additional negative experiences. Homig et al. (1998) found that many people troubled by hallucinations reported that their hallucinations began following a retraumatising experience.

Limitations

Childhood sexual abuse was only recorded when spontaneously reported to the therapist in this study. It is possible that the magnitude of the association between childhood sexual abuse and hallucinations in bipolar disorder has been underestimated by our method. Conservative criteria were used to decide whether patients had experienced such abuse; for example, two patients with a history of hallucinations were not classified as victims of childhood sexual abuse because apparent behavioural descriptions of abuse obtained by the therapists were considered ambiguous. Conversely, it may be possible that the magnitude of the association between childhood sexual abuse and hallucinations has been overestimated, in that we were not able to verify self-reports of abuse with other sources such as medical or legal documents, and had to take these self-reports at face value.

Lifetime histories of hallucinations were not validated by case note data. However, case notes probably provide a highly inaccurate record of these kinds of experiences, which will be sometimes underrecorded, or sometimes falsely recorded on the basis of ambiguous evidence (for example, patients talking to themselves). Rosenhan (1973) long ago noted that normal behaviour is sometimes misinterpreted by ward staff in this way. A further weakness of the study was that we were unable to analyse in which mood state patients with a history of hallucinations may have experienced trauma during periods of low affective disorder. The findings also suggest that clinicians should be sensitive to the possibility that early adverse experience may be an issue that needs to be addressed in the treatment and management of hallucinating patients with bipolar disorder.

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REFERENCES


