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Violence risk assessment in mental health triage

An evidence-based approach

Chief Investigators

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Acknowledgement

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Background

Reforms to models of mental health service delivery and the shift to community-based mental health care has led to developments in emergency psychiatry services:

• Community based Crisis Assessment Teams (CAT)

• Mental Health Triage services (MHT)
Background

*Emergency Psychiatry Services*

**Crisis Assessment Teams** provide 24/7 community-based crisis assessment and early treatment

**Mental Health Triage** provides access to public mental health services: Operate 24/7, provide assessment, support, and referral
Background

**Initial psychiatric assessment:**

- in busy Emergency Departments (triage)
- non-clinical settings (patients' homes, boarding houses, supported residential units)
- public places
- increasingly by telephone in tele-health call centres (triage)
Background

Mental health clinicians working in emergency crisis assessment or mental health triage are required to make **rapid and accurate risk assessments**.

Standardised violence risk assessment tools may not offer crisis/ triage clinicians optimal clinical utility in emergency psychiatric settings, where the emphasis is on rapid assessment and management of risk.
Study aims

We aimed to identify best evidence for risk factors associated with patient-initiated violence

Use of best evidence to inform a CPG (violence risk assessment at triage)

This presentation reports on the findings pertaining to mental health related risk factors for violence
Study design

The study design was based on the National Health and Medical Research Council of Australia (NHMRC 1999) methodology for systematic review.

National Health and Medical Research Council 1999. A guide to the development, implementation and evaluation of clinical practice guidelines. Canberra
Methodology

The systematic review was conducted in Melbourne, Australia, over a two-year period in 2008-2009.

In this review we aimed to answer the following question:

‘What are the risk factors for patient initiated violence in acute healthcare settings?’
Research category: Prediction and Prognosis

Research guided by the following question: ‘Can the risk for a patient be predicted?’ (NHMRC, 2008).

These studies seek to identify strongly predictive risk markers, which are then used to determine which factors place the patient most at risk.
## NHMRC Evidence table: prediction/prognostic research questions

<table>
<thead>
<tr>
<th>Level</th>
<th>Study type</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Systematic review of level II studies</td>
</tr>
<tr>
<td>II</td>
<td>Prospective cohort study</td>
</tr>
<tr>
<td>III-1</td>
<td>All or None (NA disease studies)</td>
</tr>
<tr>
<td>III-2</td>
<td>Analysis of prognostic factors amongst untreated control patients in an RCT</td>
</tr>
<tr>
<td>III-3</td>
<td>Retrospective cohort study</td>
</tr>
<tr>
<td>IV</td>
<td>Case series, poor quality cohort study</td>
</tr>
</tbody>
</table>
Methodology

Searched for literature relevant to the research question and published in English since 1997

Online databases: CINAHL, EMBASE, MEDLINE, PsycINFO and Ovid

Exhaustive search of grey literature and CPG databases
### Synopsis of search terms

<table>
<thead>
<tr>
<th>Population/setting</th>
<th>Study Factor - Violence</th>
<th>Intervention – Risk Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triage</td>
<td>Violence</td>
<td>Risk assessment</td>
</tr>
<tr>
<td>Mental health triage</td>
<td>Aggression</td>
<td>Risk appraisal</td>
</tr>
<tr>
<td>Forensic units</td>
<td>Assault</td>
<td>Risk factor</td>
</tr>
<tr>
<td>Emergency Department (ED)</td>
<td>Abuse</td>
<td>Risk marker</td>
</tr>
<tr>
<td>In-patient psychiatry</td>
<td>Dangerousness</td>
<td>Risk indicator</td>
</tr>
<tr>
<td>Community-based Psychiatry</td>
<td>Recidivism</td>
<td>Predictor</td>
</tr>
<tr>
<td>Community health</td>
<td>Criminal offences</td>
<td>Antecedent</td>
</tr>
<tr>
<td>Mental illness</td>
<td></td>
<td>Precipitant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warning signs</td>
</tr>
</tbody>
</table>
Methodology

The systematic review only included studies that report on **actual patient violence**

Scoped a broad range of acute healthcare settings and populations
Programs of research included in SR

- Clinician factors
- Community samples
- Service-user factors
- Aged/Youth
- Mental illness
- Hospital/inpatient settings

Triage
Methodology

Standardized methods outlined by NHMRC (2000b) were used to assess the level of evidence in studies identified as relevant in the systematic review.

Levels of evidence are determined by measuring the appropriateness of the study design to the topic of enquiry, or research question.
5 components that are considered in judging the body of evidence are:

1. **Volume of evidence** (which includes the number of studies sorted by their methodological quality and relevance to patients)
2. Consistency of the study results
3. Potential clinical impact
4. Generalisability
5. Applicability.

NHMRC (2008) body of evidence assessment matrix
Description of NHMRC recommendation grades

<table>
<thead>
<tr>
<th>Grade of recommendation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Body of evidence can be trusted to guide practice</td>
</tr>
<tr>
<td>B</td>
<td>Body of evidence can be trusted to guide practice in most situations</td>
</tr>
<tr>
<td>C</td>
<td>Body of evidence provides some support for recommendation(s) but care should be taken in its application</td>
</tr>
<tr>
<td>D</td>
<td>Body of evidence is weak and recommendation must be applied with caution</td>
</tr>
<tr>
<td>D (GPP)</td>
<td>Level D evidence. Contains a good practice point (GPP), a recommendation for best practice based on the experience of the guideline development group.</td>
</tr>
</tbody>
</table>
Summary of results

- Total number of results: n=6847
- Studies that met eligibility criteria for inclusion: n=326
- Studies met eligibility criteria, not quality appraisal: n=277
- Total included studies: n=49
### Summary of evidence for violence risk factors

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Volume</th>
<th>Consistency</th>
<th>Generalisability</th>
<th>Applicability</th>
<th>FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Factors - MSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostility/anger</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Agitation</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Thought disturbance (disorder)</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Severity of positive symptoms SCZ</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Suspiciousness</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Irritability</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Reduced social functioning</td>
<td>C</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>Poor self care</td>
<td>C</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>Historical factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early onset of illness</td>
<td>C</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>History of violence</td>
<td>C</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>Diagnostic factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive impairment</td>
<td>C</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Antisocial Personality Disorder</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>C</td>
</tr>
</tbody>
</table>
# Level A & B evidence violence risk factors

<table>
<thead>
<tr>
<th>Violence Risk Factors</th>
<th>Evidence Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agitation</td>
<td>A</td>
</tr>
<tr>
<td>Hostility/anger</td>
<td>A</td>
</tr>
<tr>
<td>Severity of positive symptoms SCZ</td>
<td>A</td>
</tr>
<tr>
<td>Thought disturbance (disorder)</td>
<td>A</td>
</tr>
<tr>
<td>Suspiciousness</td>
<td>B</td>
</tr>
<tr>
<td>Irritability</td>
<td>B</td>
</tr>
</tbody>
</table>
Hostility/anger

Nine studies conducted predominantly in acute inpatient psychiatric settings identified hostility as a significant risk factor for violence.

1. (Abushua'leh & Abu-Akel, 2006)
3. (Cheung, Schweitzer, Crowley, et al, 1997)
4. (Krakowski & Czobor, 1997)
5. (Krakowski, Czobor & Chou, 1999)
6. (Krakowski & Czobor, 2004b)
7. (Raja & Azzoni, 2005)
8. (Raja, Azzoni & Lubich, 1997)
Agitation

Four studies that met the inclusion criteria identified agitation as a risk factor for violence.

1. (Krakowski & Czobor, 1997)
2. (Krakowski, Czobor & Chou, 1999)
3. (Krakowski & Czobor, 2004b)
4. (McShane, Keene, Fairburn, et al, 1998)
Thought disturbance

Six included studies conducted within psychiatric inpatient settings and large community samples identified thinking disturbances as a risk factor for violence.

2. (Krakowski & Czobor, 1997)
3. (Krakowski & Czobor, 2004b)
4. (Krakowski, Czobor & Chou, 1999)
5. (Link, Monahan, Stueve, et al, 1999)
6. (Link, Stueve & Phelan, 1998)
Positive symptoms Sz

Eight studies conducted in inpatient psychiatric settings identified positive symptoms of schizophrenia (frequency &/or severity) as risk factors for violence.

2. (Cheung, Schweitzer, Crowley, et al, 1997)
3. (Fresán, Apiquian, de la Fuente-Sandoval, et al, 2005)
4. (Krakowski & Czobor, 2004a)
5. (Krakowski & Czobor, 2004b)
6. (Krakowski, Czobor & Chou, 1999)
7. (Raja & Azzoni, 2005)
8. (Raja, Azzoni & Lubich, 1997)
Suspiciousness

Four studies conducted within psychiatric inpatient settings identified suspiciousness as a risk factor for violence.

2. (Krakowski & Czobor, 2004b)
3. (Krakowski, Czobor & Chou, 1999)
Irritability

Four studies conducted in inpatient psychiatric settings identified irritability as a risk factor for violence.

1. (Almvik & Woods, 1998)
2. (Bjorkdahl, Olsson & Palmstierna, 2006)
3. (Krakowski & Czobor, 2004a)
4. (Krakowski, Czobor & Chou, 1999)
Summary

The risk factors that achieved the highest evidence grading were predominantly related to dynamic/clinical factors immediately observable in the patient’s general appearance, behaviour, speech and thinking.
Discussion

Previous studies have consistently confirmed the association between mental illness and violence \(^{38-46}\).

The relationship between symptoms of schizophrenia and violence, in particular, has been rigorously researched over the past two decades \(^{39\ 43\ 46-56}\).
Discussion

Our study findings are consistent with previous research that identifies violence risk as significantly associated with:

- positive symptoms of schizophrenia 17 38-44,
- thinking disturbances such as TCO (delusions of external control 17 18 49 63-65,
- states of mind such as hostility 44-46,
- suspiciousness 38 47 and irritability 45 48,
- behaviours such as agitation/restlessness 49 50, poor self care 51 and reduced social functioning 52.
Recommendations

Firstly, acknowledge the risk of violence associated with some mental disorders/symptoms

Secondly, develop effective risk assessment and management strategies aimed at early identification and prevention of violence
Further Research

- Well designed studies investigating staff and environmental factors significant to patient violence risk
- Consumer perspectives
References


NHMRC (2000). *How to review the evidence: systematic identification of the scientific literature*.


NHMRC (2007). NHMRC additional levels of evidence and grades for recommendations for developers of guidelines.


CPN
Centre for Psychiatric Nursing
advancing mental health practice
Recommendations

Lack of feasibility of using standardized violence risk assessment instruments in crisis and emergency psychiatric settings,

We recommend that crisis and emergency psychiatry clinicians be trained to detect observable risk factors for violence that have a robust evidence-base (Level A and B) to inform risk assessment and related care planning.